

CATALOG No. 26

2)

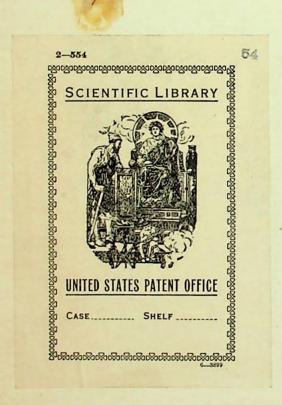
# AUTOMOTIVE SUPPLIES GARAGE EQUIPMENT





ALL PRICES SUBJECT TO CHANGE WITHOUT NOTICE

400653





PLEASE SHIP

Print Name and Address

Proprietor's Name

Number and Street or R. F. D.

Post Office

#### Key to Dealers' Prices in Catalogue

List Prices are in Bold Face Type like this

Italic Figures are like this:

This Catalogue is Keyed in Two Ways;
Sometimes by a Discount, in Italic Figures.
Sometimes a Net Price in Italic Figures.
Sometimes a Net Price in Italic Figures.
Where Italic Figures are under an Item, Column, or the Bottom of a page followed by P. C. this P. C. stands for Per-cent Discount and to get the Discount you drop the Right Hand Italic Figure, for example:

Carriage Bolts (may have printed under it)
406 P. C.
by leaving off the Right Hand Italic Figure you have 40 Per-

Carriage Bolts (may have printed under it)

406 P. C.

by leaving off the Right Hand Italic Figure you have 40 Percent Discount, or 40%.

Under a page of Bumpers, may be printed:

204 P. C.

204 P. C. and 57 in Lots of twelve.

253 P. C. in Lots of twenty-five.

This stands for 20% Discount.

20 and 5% Discount in Lots of twelve.

25% Discount in Lots of twenty-five.

An Italic Figure not followed by P. C. shows Net Price, after dropping the Right Hand Figure. When items are printed for example:

Mower Guards Each

Brass Handles Each

3504 \$5.00

By leaving off the Right Hand Figure of the Italic, you have Mower Guards Each 223 \$0.50
Brass Handles Each 3504 \$5.00
By leaving off the Right Hand Figure of the Italic, you have
Mower Guards, twenty-two cents each, and
Brass Handles, 350 cents or \$3.50 each.

Prices Subject to change without notice.

Discount

For cash in advance accompanying order, thereby eliminating bookkeeping, we will

allow discount of 3%. Any overpaid amount will be returned by check.

Inclosed Find Draft-Money-Order-

NOTICE .- If you have changed your business name or address sin

To Avoid Delay:

Please read order after w quantity, quality, number

Yours truly,

SIGN HERE:



#### AUTOMOTIVE SUPPLIES, BLACKSMITH SUPPLIES, IMPLEMENT SPECIALTIES, MACHINERY, TOOLS

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#### AUTOMOTIVE SUPPLIES, BLACKSMITH SUPPLIES, IMPLEMENT SPECIALTIES, MACHINERY, TOOLS

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#### AUTOMOTIVE SUPPLIES, BLACKSMITH SUPPLIES, IMPLEMENT SPECIALTIES, MACHINERY, TOOLS

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W HOLESALE SUPPLIES 809-19 CASS AVENUE, ST. LOUIS

#### AUTOMOTIVE SUPPLIES, BLACKSMITH SUPPLIES, IMPLEMENT SPECIALTIES, MACHINERY, TOOLS

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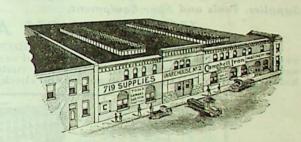
# DEALERS' CATALOGUE No. 26

# Automotive Supplies and Garage Equipment

Wholesale Only

# The Campbell Iron Co.





809-19 CASS AVENUE

Bell Telephone, Tyler 2100 SAINT LOUIS

Kinloch Telephone, Central 8700

Bell Telephone, Tyler 2100

# ALSO

# WHOLESALE DISTRIBUTORS

OF

Automobile, Garage, Body Builders', Trimmers', Machinists', Blacksmiths' Implement and Industrial Supplies, Tools and Machinery, Iron and Steel, Hardware Specialties

OUR FACILITIES FOR HANDLING MAIL ORDERS ARE IDEAL

St. Louis has wonderful transportation facilities. It has 26 railroads, 3 Electric Lines, also Barge and Steamship Lines entering its gateway from all points of the compass. Freight is handled with remarkable precision and dispatch. No other large city in the United States can equal the St. Louis record in this respect. When other large centers are congested with freight cars, St. Louis usually keeps its local and through traffic moving.

#### TERMS

Our terms are 2 per cent discount for cash in 10 days from date of invoice to our regular customers and firms with a satisfactory commercial rating. To others our terms are cash, and invoices are due at date of shipment. Remittances of less than one dollar may be made to us in two-cent stamps.

We sometimes make mistakes, and we ask that our customers write to our office immediately, so that we can investigate, and prevent a repetition of that class of errors, if possible.

#### C. O. D. SHIPMENTS

No goods shipped by freight C. O. D. unless half cash accompanies order.

With a fair size order, if you will send half of the amount, we will ship the goods, drawing through Bank with Bill of Lading attached for balance of bill.

Or, if purchaser chooses to estimate amount of bill, and remit with order, we will refund any overpaid part by check with invoice.

#### RETURNING GOODS

Do not return goods to us without first writing for instructions.

#### GOODS IN TRANSIT

Our responsibility ceases when we deliver goods to transportation company and get their receipt for goods delivered, in good condition. Any adjustment for delay in transit, loss or damage, take up with your freight agent.

In case of any overcharge, present bill of lading and expense bill to your freight agent, and request him

to adjust it.

Examine goods carefully when received, and if they bear any evidence of damage, shortage, breakage, or having been tampered with, be sure to have the delivery clerk or agent make notations on expense bills showing exact condition and weight of the articles when received. This will facilitate adjustment of any claim you may have to make.

The papers necessary to file claim for damage or shortage are: bill of lading, the original paid expense bill, and a certified copy of the invoice, together with your bill of amount of damage or shortage. In case of overcharge, bill of lading and expense bill will be all that is needed.

If goods do not reach you in good time, advise us, giving date of shipment, and we will at once start tracer.

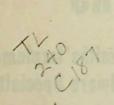
This Catalog only covers part of the goods we carry! We also carry in stock a full line of Automotive Supplies, Tools and Shop Equipment.

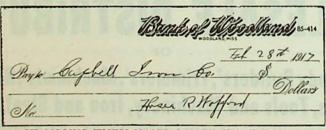
#### Where CASH Accompanies Orders

A number of our customers have CONFIDENCE in us, and when sending orders to us, estimate in a generous way the amount of their order, and send money order or bank draft for same, and by this plan save the C. O. D. charges. If in this way customer over-pays his account, we refund to him whatever balance is due him, by sending our refund check, as per cut shown.

No.	REMITTANCE ADVICE	£1500	THE NATIONAL BANK OF COMMERCE
111 0	Paid on order 4.06		STLOUIS. Mo. No. No. No.
C. R.	Amount of order 3,11	- Annual	\$.95
950	To 191 and		Y FIVE CENTS COOD the Order of
			Comishall
202	dir restault	Pearson	Campbell Campbell
		0	Helden Street &
THE CAME	BELLIRON COMPANY STLOUIS		

We also have customers who send their signed check made payable to us, with amount left blank for us to fill in. While we do not approve of this method,





IT SHOWS THEY HAVE CONFIDENCE IN US.

To those interested in our integrity, we refer to our Bank, where we have carried an account for years

> The National Bank of Commerce in St. Louis, Whose Capital and Surplus is \$12,000,000.00

OR TO

Bradstreet

R. G. Dun & Co.

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	And A. SHRICH WATERPROOF DRESHILD WAX. PREPABED WAY. WEATHERSTOOL WESTING SHRICH WEESTING WEESTING WEESTING WELDERS AND GLASS GARRIEST WHEELE	AND COUPLERS  AN

Width.

50-inch

50-inch

54-inch

30

32

32

Width.

#### ENAMELED CLOTHS.



In Bolts of 12 Yards Per Yard. Cut Roll Lots. Lots. 50 inches. Enamel Face, White Back Drill.. 508 452 50 inches. Enamel Face, White Back Duck.. 653 607 \$1.00

#### WHITE COTTON DUCK No. 8.



Per Yard.....\$0.90 \$1.05 \$1.22 \$1.27 \$1.37 Widths, inches..... 66 84 96 108 Per Yard......\$1.71 \$1.87 \$2.21 \$4.26 \$4.86 \$5.52 

#### BLACK OILED DUCK.



Full Rolls, 56 cents per yard less.

#### BOW LINING.

 Black. Price per yard.
 503
 \$1.00

 Drab. Price per yard.
 506
 1.00

 White and Black. Price per yard.....1009

#### GIMP.



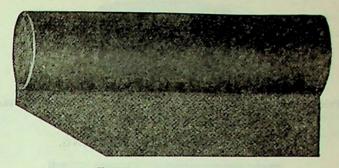
No. 101. Width 1/2-inch. D. F. Dark Green Muslin; Pebble Grain, dull finish. 

#### BLACK DRILL WELTING.



No. 1126. %-inch Comb. Welt Enamel Drill, pebble grain, glazed finish. Per yd., 3½3; per 100 yds.....2706 \$5.00 No. 1128. %-inch Comb, Welt Enamel Drill, pebble grain, dull finish. Per yd., 3½6; per 100 yds......2708 \$5.00 No. 1153. %-inch Combination Welt Art Drill, long grain, bright finish. Per yd., 4½2; per 100 yds.....3006 \$6.00

#### FORD RUBBER.



Full Bolts about 65 yards. Ounce. Per Yard. Black Back Ford Grain........633 \$1.37 Black Back Ford Grain...........681

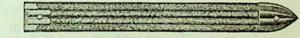
Black Back Ford Grain .........736

In roll lots, 56 cents per yard less.

#### MOTOR CLOTH.

	No.			1					Per y	ard.
	D-188.	54"	2-ply	Long	Grain	Drab	Back .	I	356	\$2.00
	D-207.	54"	2-ply	Long	Grain	Drab	Back .	I	351	2.00
	D-213.							I		2.00
	D-271.	54"	2-ply	Long	Grain	Drab	Back	1	253	2.00
	D-272.	54"	1-ply	Long	Grain	Black	k and	White		
	Ba	ck .						I	203	2.00
-	D-273.	54"	2-ply	Long	Grain	Blac	k and	White		
	Ba	ck .						I	458	2.00
								I		2.00
			R	oll lots	, 15 ce	nts pe	r yd. le	ess.		

#### HIDEM WELT.



%-inch Dull Finish Drill, sewed. \$8.00 %-inch Imitation Leather, Bright, sewed. Per roll, 100 yards..... 8.00



### The Aristocrat of Automobile Welts

Long Grain Semi-bright finish.

#### METAL TIPS.



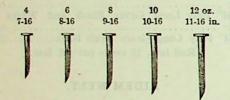
	No. 4. N	o. 2.	No. 3. No. 1.	
No. 4.	Japanned.	Per	100 858	\$1.25
No. 2.	Japanned.	Per	100 854	1.25
No. 3.	Japanned.	Per	1001856	2.25
No. 1.	Japanned.	Per	100	1.25



#### NON-STRETCH TOP WEBBING.



#### TRIMMERS' TACKS.



#### Swede's Iron Tacks.

			Per lb.	Per	Ib.
		Length	1-lb. pkg.	25-lb.	boxes
21/2	ounce	3/s in.	252	274	\$1.93
3	ounce	3/s in.	246	217	1.78
4	ounce	ie in.	234	193	1.63
6	ounce	½ in.	219	189	1.53
	ounce		202	- 172	1.43
	ounce		197	169	1.38
12	ounce	11 in.	183	154	1.33

#### Metalene Nails.

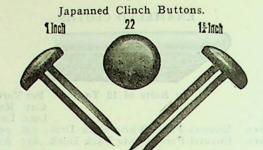


#### TRIMMERS' BUTTONS.





Metalene Tufting Buttons.



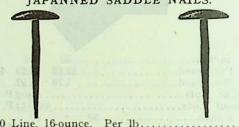
22 Line. 11/4-inch shank. Per gross.................287 \$0.50

# JAPANNED LINING NAILS.

#### Solid Head.

Ounces	4	6	8	. 10	12	14	16
Per pound	336	317	289	243	254	257	258 .83
Per paper			106	20	109	.20	20

#### JAPANNED SADDLE NAILS.



#### SEACO THREAD.



 No. 16. Per Tube
 4800 Yard Tubes.
 2507
 \$3.50

 No. 20. Per Tube
 2355
 3.50

TUFTING TWINE.



SEAMING CORD.

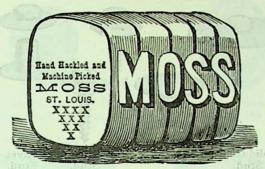


In One-Half Pound Balls.

Best 12-ply Finished Jute.

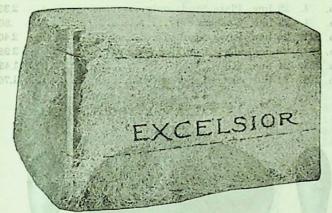
No. 15. Lest quality, smooth. Per pound	\$0.25
Paper Seaming Cord, Cable Laid. Per pound169 Put up in about 6-pound balls.	.25

#### MOSS.

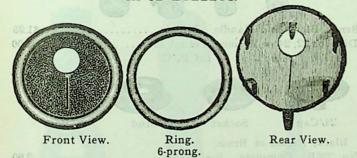


XX.	Machine Picked. Per pound	\$0.20
XXX.	Machine Picked. Per pound 177	.25
XXXX.	Machine Picked. Per pound 186	.30
2.40	In bales of about 150 pounds.	

#### EXCELSIOR.

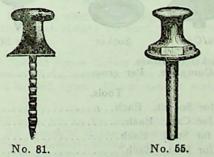


#### KNOB EYELETS.



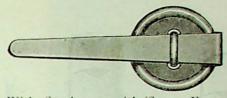
No. 1.	Harness Leather Centers. Per gross704	\$1.00
No. 2.	Pebble Leather Centers. Per gross758	1.10

#### CURTAIN KNOBS.



No. 81. To drive. Double Curtain. Per gross....801 \$1.25 No. 55. To rivet. Double Curtain. Per gross....707 1.10

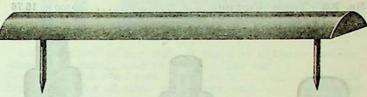
#### PERFECTION CURTAIN PATCHES.



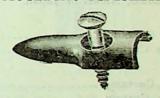
With Staples or with Screw Eyes

No. 4.	13-in. inside diam., 5 prong. Per gross3108	\$4.50
No. 5.	1-in. inside diam., 5 prong. Per gross1258	5.75
No. 6.	1¾-in. across clinch plate. Slot 1¾-in., length over all 5¼-in., leather ½-in.	
	thick. 6 prong. Per gross5259	7.50
Packe	ed ½ gross in a box.	

#### OVAL TOP MOULDING.



#### MOULDING FINISHERS.



#### RATTAN MOULDING.

	Per ft53	
34-inch, half round.	Per ft	.10

#### TRANSPARENT CELLULOID.

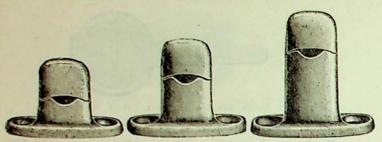


#### In Sheets.

Size,	20x36	inches.	10-1000	thick.	Per	sheet	\$0.96
Size,	20x50	inches.	10-1000	thick.	Per	sheet	1.25
Size,	20x36	inches.	15-1000	thick.	Per	sheet	1.40
Size,	20x50	inches.	15-1000	thick.	Per	sheet	1.75

203 P. C.

#### AUTOMOBILE CURTAIN FASTENERS.

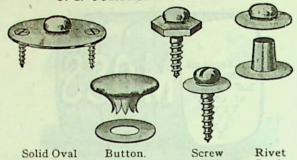


Single Curtain, Flat Base

Double Curtain, Flat Base. Base Te

Triple Curtain, Flat Base.

#### U. S. CURTAIN FASTENERS.



Stud. Stud.

		Japanned, Nickel or Brass.	
Si	ze.	Gro	Lots.
No.	4.	22 line, Slotted or Hex., Screw Study	. \$2.95
No.	4.	22 line, Rivet Stud	2.40
No.	4.	28 line, Rivet Stud	2.70
No.	4.	28 line, Slotted or Hex., Screw Stud	3.25
No.	4.	28 line, Plate Studs only	2.35
		28 line, Washers only	
No.	221.	24 line, Rivet Stud	2.40
No.	221.	24 line, Slotted or Hex., Screw Stud	2.95
No.	225.	24 line, Rivet Stud	. 1.45
No.	225.	24 line, Slotted, Screw Stud	1.70

#### Murphy Pressed Solid Brass Fasteners.

Brass, Ni	ckel or Japan.	Per	Gross
No. 200.	Single Curtain	5006	\$ 8.12
No. 201.	Double Curtain	5453	9.28
No. 202.	Triple Curtain	10509	16.76



No. 115. To Clinch.



No. 243. To Screw.

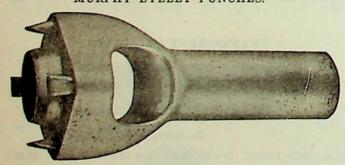
Brass, Nickel or Japan.



No. 245. To Rivet.

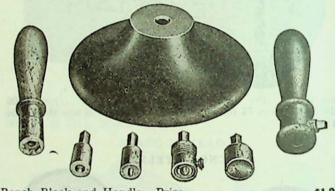
To Clinch:	Per	Gross
No. 115.	Single Curtain4501	\$ 7.70
No. 116.	Double Curtain5403	8.88
To Screw:		
No. 243.	Single Curtain7006	14.83
No. 244.	Double Curtain	16.00
To Rivet:		
No. 245.	Single Curtain	14.83
No. 246.	Double Curtain7207	16.00
-	Stamped Eyelets, Brass, Nickel or Japan.	2.08

#### MURPHY EYELET PUNCHES.



This Punch is used in connection with the Murphy Eyelet, one blow will cut the necessary holes in the material for the Eyelet.

#### U. S. FASTENER TOOLS.



Bench Block and Handle.	Price\$1.20
Dies for 22, 24 or 28 line.	Per set (4) 3.00
100000000000000000000000000000000000000	108 P. C.







Socket





Stud.

Black, Nickel or Brass.

No. 226B. Complete. Per gross..... ..... 2.90



24/Cap

Socket

Screw Stud

Black, Nickel or Brass. No. 226C. Complete. Per gross	.55
Tools.	
Upper Die for Socket. Each\$0. Lower Die for Cap. Each	

Upper Die for Stud. Each...... 2.00 Hand Tool (handle and base). Each...... 1.25

103 P. C.

#### SOCKET CURTAIN FASTENERS.







No. 213A.

The latest type of Socket. Designed to overcome the tendency in all kinds of fasteners to tear out of the curtains.





No. 213B. Slotted Head Wood Screw.

No. 248. Two Screw.



No. 213H.

Hexagon Base Wood Screw.

	l or Nickel.	
No. 213B.	Single, complete. Per gross\$ 6.60	,
No. 213C.	Double, complete, Per gross 9.50	
No. 213H.	Single, complete. Per gross 6.65	,
No. 213I.	Double, complete. Per gross 9.45	,
No. 248.	Single, complete. Per gross 9.05	,
No. 249.	Double, complete. Per gross 11.85	
No. 250.	Triple, complete. Per gross 12.75	,
No. 213A.	Sockets only. Per gross 2.85	









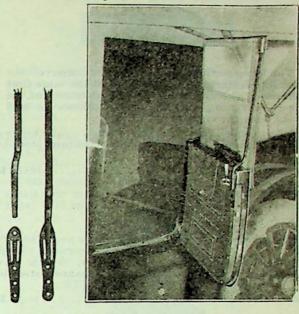


No. 151.

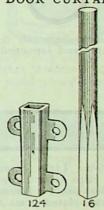
No. C9-2.

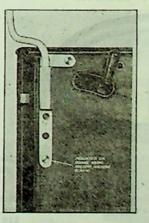
The No. 151 Punch is used for cutting the material for the socket, and must always be used with "Lift the Dot" Fasteners.

ELBERG DOOR CURTAIN CARRIERS.



#### BLACKMORE DOOR CURTAIN CARRIERS.







No. 15.

Designed for every type of door.

Rod is \(^3\epsilon\). and white nickeled, \(^2\epsilon\)-in. offset.

#### PIONEER CURTAIN LIGHTS.



The construction of these lights conserves the desirable features of lightness and at the same time permits of a secure attachment of the fabric and the glass, preventing rattling or a tendency to pull away from the curtain.

No. 105. Oval. Size, 5\%x10\%2 inches; \frac{3}{6}-inch beveled glass; nickel plated brass frame and japanned steel back



No. 107. Oblong. Size, 6½x15½ inches; %-inch beveled glass; nickel plated brass frames and japanned steel back



No. 109. Round, 5%-inch diameter, it-inch beveled glass; nickel plated brass frame and japanned steel back ring. 



No. 116. Size, 5\%x17\frac{1}{2}-in. Light, Strong, Beautiful, rubber channel supplied. Slips around edge of glass and forms a shock-resisting, leak-proof cushion. %-in. ground and beveled edge. Nickel-plated brass frame and Japanned steel back ring.

#### IDEAL CURTAIN LIGHTS.



The fabric on the lower side comes between the back plate and the glass, insuring a perfect fit, whereas the upper side is left between the frame and the glass.

No. 50-B. Inside, 51/4x111/8 inches; outside, 61/8x12 inches; japanned on steel; plain glass; oval; packed two in box.

No. 50-E. Inside, 51/4x111/8 inches; outside, 61/8x12 inches; nickel on copper plated steel; plain glass; oval; packed two in box.

#### REAR CURTAIN LIGHTS FOR FORD CARS.





Can be attached without removing rear curtain. Requires

For 1917 and later. Price, each......251

#### STIK-TITE WINDOWS.







No. 3

No. 17. No. 6-1.

No. 17. To fit Ford 1917 and later models, having three small windows in each curtain, or will fit any opening 91/4 inches long or less, or 51/4 inches wide or less. Made of auto rubber.

Buick, prior to 1918 models; Maxwell, except 1919 model; Chevrolet, El-Car, Crow-Elkhart, Metz, Briscoe, Regal and many other cars with oval windows. Will fit any oval opening 181/2 inches deep or less and 81/2 inches long

#### WINTER CURTAIN LIGHTS.



A new type of screw and sleeve fastening used in connection with patent clips for holding glass in frame, which positively eliminates all breakage of glass as well as making light waterproof when properly installed. Will not sag or wrinkle curtain.

No. 110-B. Oval. Size inside, 6x91/2 inches brass frame, nickeled; steel back plate; japanned; bevel glass.

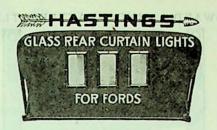
No. 6-B. Oval. Size inside, 37/8x7 inches; brass frame, nickeled; steel back plate, japanned; plain double strength glass.

Jiffy side curtain opening of Gothic shape 103/4 inches or less, or 31/2 inches wide or less. Made of standard mohair.

Price, each.... No. 13-D. Made of mohair, as many of the 1918 Buick cars have mohair tops. Will fit all 1918 models

No. 34-B. To fit Oakland touring car models 34 and 34-B.

Made of long grain motor fabric. Will fit any oval opening 141/2 inches or less, or 81/2 inches deep or less. 

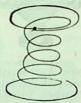


#### CUSHION SPRINGS ON BANDS.



Three springs on each band, 19 inches long; made of 14gauge wire.

#### AUTO CUSHION SPRINGS.



#### TWIN CUSHIONS FOR FORD CARS.



Good quality divided cushions for front Touring and Runabout. Flare out at top; full large, filling up space and fitting snugly against sides. Premier wire springs are used, securely anchored to a strong wood frame; padded with cotton and covered with artificial leather, fit all model Fords from 1914 to 1921, inclusive. Specify if for early or late 1922 model. One pair packed in shipping carton. Weight, 20 lbs.

### ONE-PIECE CUSHIONS FOR FORD TOURING AND RUNABOUTS.



Built to stand hard jolts and for long wear; strong, substantial cushion, made of artificial leather; no buttons, all piped style. Frame is heavier than regular Ford frame, having a wood insert in bottom edge, making cushion very rigid and strong. Front construction has 32 oil-tempered springs; rear 36 springs. Fit 1914 to 1922 models; packed one in heavy shipping carton; weight, about 20 pounds.

#### APRON HOOKS AND RINGS.



No. 5546-B. %-inch Ring, Japanned. Per doz .... 307 \$0.50

#### "STIK-TITE" ROOF PATCHES.



No. A-650. Patching Sheet, size 91/4x51/4. Made of motor rubber. Suitable for patching Ford and other imitation leather tops. This sheet contains approximately 50 square inches.

No. B-637. Same as above. Made of standard mohair; 3x12 inches.

No. F-639. Same as above. Made of long grain motor fabric; for repairing Pantasote, Drednaut or Neverleak tops; 3x12 inches.

Packed dozen strips in a box. Twelve boxes, or one gross strips, in a carton. Weight, 15 pounds.

#### STIK-TITE ROOF PATCHES.



Applied same as any "cold patch." Guaranteed to stick. Packed eleven patches, assorted, in a box—5 large round patches for tops, 5 small round patches, 1 long patching strip.

No. B. For mending mohair tops. Box of 11, assorted.

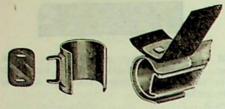
No. F. For mending long grain rubberized tops, such as Neverleek, Drednaut, Pantasote, etc. Box of 11, assorted.

#### AUTOTRIM.



Autotrim is a folded upholstery tape, %-in. wide, made from high-grade artificial leather in medium bright finish, to replace worn out or damaged binding on your car and furniture. Autotrim is distinctively a retail item, to sell for 25c a package. Price, per box (2 dozen)...........3602 \$6.00

#### PERFECTION WIND SHIELD CURTAIN CLIPS.



For attaching curtains to windshields and bow sockets.

The curtain fitted with this clip is readily attached or detached from inside of car. It is simple and neat, and obviates the necessity of tapping into frame and otherwise mutilating the shield.

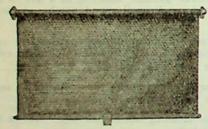
#### HARTSHORN CURTAIN ROLLERS.

# HARTSHORN'S SELF-ACTING SHADE ROLLERS

#### One-Piece Wood.

11/4-inch.	Length,	60 inches.	Price,	each653	\$1.00
				wing sizes:	
				1103	1.50
11/4-inch.	6 feet.	Price, each		1806	2.25

#### REXFORD SUN CURTAINS.

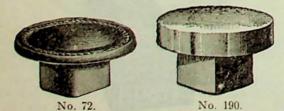


Made from the new Rex curtain material, which is a coated fabric, made waterproof and especially embossed to produce finish superior to silk, will not fade or be rotted by the sun, will not tear and if soiled can be cleaned by use of soap and water.

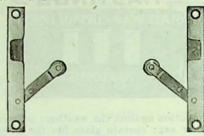
Ford Coupe Side Window Curtains. Each. \$2.60
Ford Coupe, Rear Window Curtains. Each. 385
Ford Sedan Side Window Curtains. Each. 3.78
Ford Sedan Rear Window Curtains. Each. 4.00

254 P. C.

#### TOP PROP NUTS.



#### EDWARD'S WINDOW ANTI-RATTLERS.



Designed to be applied to either the sash stile or the stop casing. The arm of this device bears against the sash or stop as the case may be, holding the sash tight against the outside stops and preventing it from rattling. The arm spring actuates and the wheel on the end of the arm reduces the friction and allows the sash to move easily. 1¼-inch projection.

#### LOCK TYPE ANTI-RATTLERS.



No. 505.

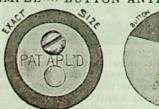
The original Lock-Type Anti-Rattler to be placed on the market. Vibration cannot shake loose the relentless grip of the knurled nut, which when turned locks fast against the post. All metal parts are brass with heavy nickel plate. Packed fifty to carton; five display cards of ten each with necessary plated wood screws.

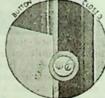
#### SWIVEL LOCK-TYPE ANTI-RATTLERS.



No. 506.

#### CAMPBELL BUTTON ANTI-RATTLERS.

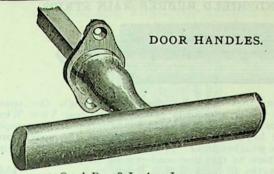




or Closed Cars.

A rubber button so made that when fastened to the frame it turns in and down against the glass, forming a wedge, as the screw it works on is off center.

Made of high-grade rubber, and hard steel, nickel plated.
On display card, holding 36 anti-rattlers, 32 on face, 4 on back. Complete with screws, washers and instructions.
Diameter of card, 74x11.



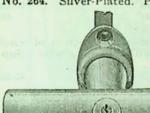
Oval Bar 3 Inches Long.

Per pair.....1706 \$2.25 Brass. Silver-Plated. Per pair....1952 No. 151.



Three Inches Long. Inside Handle. Per pair....1007 \$1.50

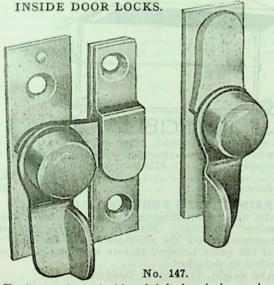
No. 264. Brass. No. 264. Silver-Plated. Per pair.....1208



No. 301. Size bar, 3¾x¾-in. Locking Handle Brass, Nickel Plated. Price, per pair.

6006 \$9.00

- (3)



To be used on inside of left hand door when installing 

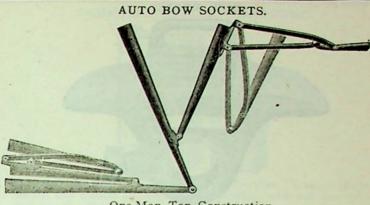


#### ULTRA HANDLES FOR FORD CARS.

Sets up over regular door, adding 100 per cent improved appearance to the car, and does wonders toward making an easy opening door, instead of a stiff, sulky opening door.

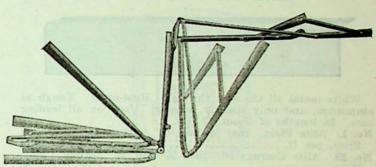
Price, per set (3) 503 \$0.75 Size

Price, per doz. sets 5406



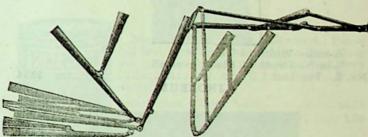
One-Man Top Construction. For roadsters; 3-Bows.

No. I.	Length of Top, 45 to 50 inches.	Per set\$9.00
No. J.	Length of Top, 51 to 56 inches.	Per set 9.00
No. H.	Length of Top, 52 to 58 inches.	Per set 9.00



One-Man Top Construction. Four Bows; for touring cars.

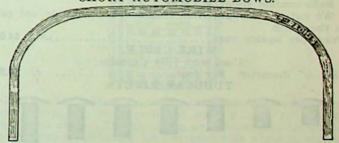
	of top, 88 to 92 inches, I	
Per set		\$10.00
No. B. Length	of top, 93 to 98 inches.	Per set 10.00



One-Man Top Construction. Five Bows; for touring cars.

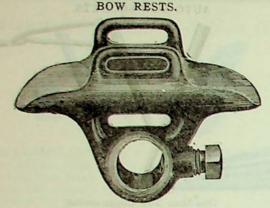
No. C	. Length	of top,	94 to	100 inches.	Per set \$11.00		
					Per set 11.00		
					Per set 11.00		
356 P. C.							

SHORT AUTOMOBILE BOWS.



Four Bows to a Set.

1x1½ in. 1x1½ in.	Length 4 ft. 2 in., including 5 ft. 4 in. Each. Length 5 ft. 4 in. and over. Each	
	Outside Measurement	

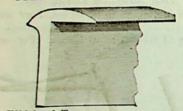


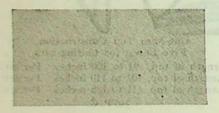


White metal all the way through. Rust-proof. Tough as aluminum, and only slightly heavier. Used on all leading cars. In lengths of about 13 feet.

No. 1. Alite Plain. Size ¾" top, ¾" bottom.

#### STEEL BODY MOULDINGS.





Plain Green or Brown, 72" wide. Rolls contain about 25 yards.

We cut any amount from length of roll, but do not cut in the width.

WIRE CABLE.
Used with Jiffy Curtains.

# TOTOTOT

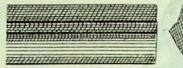
 Japanned.

 Size, inches
 4-16
 5-16
 6-16
 7-16
 8-16
 9-16
 10-16

 2203
 2207
 2206
 2506
 2809
 2907
 3009

 Per 1,000
 \$1.80
 \$1.80
 \$2.00
 \$2.20
 \$2.30
 \$2.50
 \$2.70

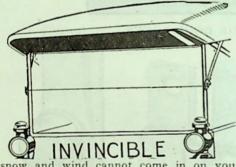
#### WINDSHIELD RUBBER RAIN STRIPS.



Lots of weather can and does get through the space between the upper and lower glasses of a Clear View Wind Shield. It is so designed, that when applied to the upper edge of the lower glass, it completely fills the space, and the shield is weather-proof. It can be applied in a moment, and will adhere to the glass and remain in place.

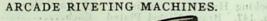


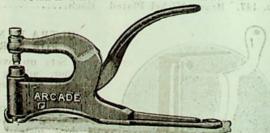
#### WINDSHIELD WEATHERSTRIPS FOR FORD CARS.



RAIN GUARDS FOR FORD CARS.

Prevent the water from dripping through the hood joints and "shortening" the wiring. Made in two parts, one narrow strip fastening under the windshield and the large or main part of the guard fastened thereto with glove buttons. Easily attached or detached.





#### COV-R-BLACK AUTO TOP LINING DYE.



#### RUB-R-TITE.



For Re-rubberizing and Dressing Imitation of Leather Tops and Rubber Tops. Makes them waterproof. Applied with a brush overnight.

Waterproofing and Dressing for Mohair Cloth Tops. Waterproofs and re-dyes, leaving the top pliable and produces in color that rich silk and lasting finish; applied with an ordinary brush; dries in about one hour.

#### LEATH-R-NU.



A Dressing for renewing Leather and Pantasote Tops and Cushions. Produces a rich, lustrous black finish, dries in fifteen minutes, leaving the material soft and pliable. Unaffected by sun or water or gasoline.

#### DULL-LAC TOP DRESSING.

Produces a dull, even finish on tops made of leather, pantasote or other imitations. Easily applied. Car can be used an hour or so after application. Pint cans. Each. \$1.00

 Pint cans.
 Each.
 \$1.00

 Quart cans.
 Each.
 1.75

 Gallon cans.
 Each.
 6.00

#### WATERPROOF MOHAIR TOP DRESSING.

Is a positive waterproofing for leaky mohair tops, and at the same time dyes the top a uniform and lasting black, does not streak, gum or rub off and leaves the material soft and pliable.

Gallon cans. Price, each	\$5.00
Half gallon cans. Price, each	2.75
Quart cans. Price, each	1.50
Pint cans. Price, each	.90

331 P. C.



CAMPBELL LEATHER DRESSING.



#### JOHNSON'S BLACK-LAC TOP DRESSING.



Dries in fifteen minutes.

Easily applied, is a preservative and renders the leather soft and flexible. Does not rub off on hands or clothing. Waterproof and inexpensive.

 Waterproof and mexpensive.

 ½ Pint cans.
 No. in case, 48. Price, each.
 \$0.75

 Pint cans.
 No. in case, 48. Price, each.
 1.25

 Quart cans.
 No. in case, 24. Price, each.
 2.00

#### 336 P.C.



#### FORD CAR ENAMEL.

Makes a Ford car look like new. Painting and varnishing at one operation. Only one coat is necessary, requiring but very little time and effort to apply. Dries quickly.

ODY DYLLED

#### EV-R-STA BODY ENAMEL.



This durable, lasting, fast color enamel is free flowing and quick setting. It dries overnight with a hard, yet elastic gloss black finish. Though giving an expertly-smooth finish, this enamel is celebrated for the ease with which a handy man can brush it on. A little care, a clean car, and a clean paint brush—and the job is well and quickly done.

Pints ..... \$0.50 Quarts .... \$1.50 Pints ..... .85 Gallons .... 5.00

506 P. C.

#### RADIATOR NEVERLEAK.



A free-flowing liquid, which mixes readily with water. Will not clog or impair cooling system. Stops all ordinary leaks in radiator in from 5 to 10 minutes.

No. 1. Assortment consisting of one dozen 4½-oz. cans; one-half dozen 9-oz. cans, one 9-oz. can Free.

No. 2. Assortment consisting of 18 4½-oz. cans and 18 9-oz. cans. Two 4½-oz. cans and two 9-oz. cans Free.

#### JOHNSON RADIATOR CEMENT.



Will stop leaks in from two to ten minutes without laying up the car. All you have to do is to remove radiator cap and pour the cement into the radiator. Will not clog cooling system. Forms a hard, tough, pressure-resisting substance which is insoluble in water and consequently makes a permanent seal.

A half pint is ordinarily sufficient for a Ford or other small radiator.

1/2 Pint cans.	No. in case, 48.	Price, each\$0.75	
Pint cans.	No. in case, 48.	Price, each 1.25	
Quart cans.	No. in case, 24.	Price, each 2.00	
337 P. C.			



#### X RADIATOR LIQUID.



Finds and repairs permanently leaky radiators and cracked waterjackets without solder or welding. Makes entire cooling system leakproof, rustproof and scaleproof. Simply pour it in. Contains no harmful cement, glue, shellac, meal or other injurious substance. Pint can will repair radiators up to 25 gallons capacity.

# SMOOTH-ON AUTO REPAIR OUTFITS



This Cement repairs cracked water jackets, or circulating pipes, leaky radiator tubes, etc. No experience necessary to make quick and permanent repairs. Smooth-On expands and contracts same as iron, and is not affected by heat, cold water or gasoline.

Smooth-On Auto Repair Outfit

One 1-pound can Smooth-On No. 1 Cement.

One 1-pound can Elastic Smooth-On Iron Cement.

One roll Smooth-On Tape.

One Complete Instruction Book.

Price of Complete Outfit. 1257 \$1.75

#### LEAK-NO IRON CEMENT.

For Permanently Repairing Leaks in Iron and Steel.



Leak-No is a metallic compound. When mixed with water, and applied like putty, it permanently repairs any ordinary leak in iron or steel.

It is warranted to stand any heat or chemicals that iron or steel is proof against, and any pressure of oil, gas, steam, air, ammonia, or water, if applied according to directions.

1/4-lb.	Cans.	Per can	406	\$0.50
1-lb.	Cans.	Per can	672	1.00
5-lb.	Cans.	Per pound	604	.90

#### RIM AND GASKET SHELLAC.



For Gaskets and sealing Joints to make a perfectly tight union, cementing tires to rims, handle bar grips, etc., and for protecting coats on primary or secondary wiring. If too heavy thin with denatured alcohol.

Number in	case, 12. Gals., 6 in case.
Gallons.	Each\$4.50
Quarts.	Each
Pints.	Each
½-Pints.	Each
2-oz. Bottle.	Each
	401 P. C.

#### ORANGE SHELLAC.

		gallon	
Price,	per	½-gallon2303	3.50

#### HOLDFAST LIQUID SHELLAC



A great preparation for Tires and Grips. A thick, heavy solution; has great adhesive qualities. 2-ounce Bottles with Swab. Per doz ...... 150 \$2.25

#### ANTI-FREEZING ALCOHOL AND GLYCERINE SOLUTION.



NUBACK SOLUTION is made from 190-proof alcohol and chemically pure glycerine containing no injurious chemical to radiator and hose connections, whereas both No. 5 and No. 6 188-proof denatured alcohol contain either benzole or benzine or both, and both of these are natural solvents for rubber hose connections.

Nothing better has been devised than the above combination. Remember when ordering in barrels that you can sell the barrel at a profit.

In Bbls., 50 gals.	Per gal	
5-Gal. cans.	Per gal	
1-Gal. cans.	Per gal	

#### PERMATEX GASKET CEMENT.



Increases the efficiency of an engine because it prevents leaks where leaks cause greatest losses; prolongs the usefulness of gaskets because of its resistance to gasoline, oil, water and heat. Has five times the heat resistance of shellac.

water and neat. Has	live times the heat resistance of shellac.
2-Ounce Swab Bottle	e. Each\$0.20
1/4-Pint Cans.	Each
1-Pint Cans.	Each
1-Quart Cans.	Each 1.50
1-Gallon Cans.	Each 5.00
	402 P C

#### PERMATEX FORM-A-GASKETS.



A thin layer of Form-A-Gasket is usually sufficient to seal all imperfections, but if you desire a thicker gasket, apply one or more coatings on top of the first. Saves much time in motor assembling, and saves much gasket material that otherwise is wasted.

1/4-Pint Cans.	Price, each\$0.45	
1-Pint Cans.	Price, each 1.25	
1-Quart Cans.	Price, each 2.25	
	406 P. C.	

#### DENATURED ALCOHOL.

No. of pints	Freezing temperature of
alcohol to one	the mixture
gallon water	Degrees Fahrenheit
1	Plus 23
2	Plus 12
3	Plus 3
4	
5	
6	
7	
8	
Barrels, per gallon	
5 Barrels, per gallon	Market
10-gallon cans, per gallon	

We can furnish Denatured Alcohol in 10-gal. shipping can (no smaller quantity). This to be shipped separately from other merchandise, at an extra charge of \$1.50 per lot, plus the value of the Alcohol at the time per gallon at 15c above

price in one-barrel lots.

COMMON SENSE AUTO POLISH.



The Polish that does not collect dust. Unexcelled for cleaning and polishing Automobiles, Furniture, Pianos. Leaves a dry surface.

		Per
Small, 6-oz. Bottles: Weight. Po	er Case.	Bottle.
Whole Case, 48 bottles. 40 lbs1440		
Half Case, 24 bottles. 20 lbs 780	03 11.75	.50
Medium (Pint), 16-oz. Bottles:		
Whole Case, 24 bottles. 47 lbs1440	06 22.50	
Half Case, 12 bottles. 24 lbs 780		1.00
Large (Quart), 32-oz. Bottles:		
Whole Case, 12 bottles. 43 lbs136,	58 20.00	
Half Case, 6 bottles. 22 lbs 73.	52 10.50	1.75
Gallons (128 oz.):		
Whole Case, 4 bottles. 55 lbs1566		
Half Case, 2 bottles. 28 lbs 840	07 11.00	5.50





CLEANER.

etc. For cleaning the Removes scum, road-oil, grease, body, hood and fenders of automobiles, preparatory to polishing.

8-oz. Cans. No. in case, 144. Price, each......\$0.45 No. in case, 100. Price, each............60 1-lb. Cans. 331 P. C.

11-HOUR POLISH.



For Pianos, Iron Beds, Typewriters, Automobiles, Carriages, etc.

Apply with soft cloth, and rub dry. Packed 12 bottles to case.

		1	Per doz.	Each
3-Ounce	Bottles	852	\$1.50	\$0.15
	Bottles			.35
32-Ounce	Bottles	4758	9.00	1.00

### SIMONS SIMONIZ.



The brightest finish for automobiles, office desks, furniture and woodwork.

A pure vegetable paste compound. Contains no acids or injurious materials. Produces a durable dry velvet-like veneer or coating that protects finish from rain, mud, dust and other destructive elements.

24 cans to the case. 

### SIMONS KLEENER.



Removes all blemishes, spots or stains from fine paint, varnish or enamel finishes. It prepares the finish for Simoniz by removing all blemishes in the finish.

24 cans to the case. Price, per case......9608 12.00

### JOHNSON'S PREPARED WAX.



A dust-proof Auto Polish.

For body, hood and fenders of automobiles.

It imparts a hard, dry oilless finish which does not collect or hold the dust. 

SPEE-DEE CLEANSER.



Wash your hands without water. For cleaning dirty, greasy hands. Removes spots of grease, ink, tar, smudge, paint, soot and dirt of every description. 27-oz. cans.

337 P.C.

LAVA SOAP.



### For Toilet and Bath.

For the use of blacksmiths, auto repair men, boiler makers, farmers, foundry men, gas fitters, machinists, metal workers, plumbers, stove repairers and tinsmiths.

All these will find Lava Soap a valuable aid in removing stains caused by handling rusty, oily, or other obstinate substances, and in easily cleaning the hands and arms of anything that soils them.

Lava Soap will do equally well for Toilet or Bath in cold or warm, soft, hard or salt water.

 Medium size cakes, per box of 100.
 6257
 \$8.50

 Medium size cakes, each
 72
 .10

### SQUARE C AUTO SOAP.

14.00 15.75

Square C Auto Soap is especially manufactured for highly polished varnished surfaces, and will not allow your car to become dingy and have a streaked appearance, but will restore the original lustre and leave a clean, polished surface, without injury to the finish.

Square C Auto Soap is made from oils, which makes it perfectly harmless. Linseed oil, which is the life of all paint or varnish, is in it, and it retains enough of the properties of linseed oil to act as a preservative of varnished surfaces.

5-lb. cans.	Each	\$2.00
10-1b. cans.	Each	3.50
25-lb. cans.	Each5503	7.00
1/2-barrel.	Per pound	.20
1-barrel.	Per pound 116	.18

VELVO GRIT SOAP.



For Motorists, Mechanics, Printers, Miners, for the House, Sinks, Bath, etc.

Packed 4	doz. in case	. Wt., 48	lbs.	Chevin
12-oz. Cans.	Price, per	doz	906	\$1.50

### 11-HOUR METAL CREAM.



For Gold, Silver, Aluminum, Copper, Brass, and all metal trimmings. This Polish contains no poisonous acids.

Cleans all metals like new.

Patent stopper.

Directions.—Apply with soft cloth, and let dry. Rub off with cloth or chamois. Packed 12 bottles to case.

	Person II	er doz.		Each
6-Ounce	Bottles	\$ 3.00		\$0.25
16-Ounce	Bottles3150	4.00		.35
32-Ounce	Bottles7152	8.00		.75
1/2-Gallon	Cans8605	12.00	751	1.30
1-Gallon	Cans	24.00	1856	2.50

### JOHNSON'S CARBON REMOVER.



No matter how choked up your motor may be, this will penetrate and soften the carbon so that it blows out of the exhaust as your car is operated. It isn't necessary to lay up your car for any length of time—an hour is ample, although the Remover may be allowed to remain in all night, if more convenient. The use of Carbon Remover every 1000 miles will save the wear and tear on your engine and give you the maximum power and speed from the minimum amount of fuel.

Quarts.	No. in case, 24	Price, each\$2.00	0
Pints.	No. in case, 48	Price, each 1.2	5
Half-Pints.	No. in case, 48	Price, each	5

### THOMAS SEAT COVERS.

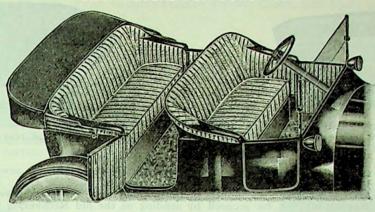
#### Description of Seat Cover Materials.

- No. 8. Tightly woven single texture material, salt and pepper shade. Washable with gasoline, soap or water.
- No. 24. Light grey material with wide dark grey stripe, exceptionally good quality. We recommend this for those desiring a real set of seat covers.
- No. 25. Dark grey material with narrow black stripe, similar to whipcord, and also similar to the upholstering in Ford closed cars.
  - No. 26. Dark grey material with narrow black stripe. Very suitable for an inexpensive set of neat covers.
  - No. 27. Dark grey material with narrow white stripe. Very suitable for an inexpensive set of seat covers.
  - No. 28. Solid dark grey material, no stripe. Very suitable for an inexpensive set of seat covers.
  - No. 29. Olive drab material, similar to army duck. Makes a very pretty and inexpensive set of seat covers.
  - No. 30. Tan material with white stripe.

No. 30. Tan material with white stripe.	M	Matarial	Material
Buick, Reo, Essex, Oakland-	Material Nos. 26,27,28,29,30	Nos. 25,8	No. 24
Two-passenger Roadster—all models		\$15.75	\$18.00
Five-passenger Touring Car—all models		31.50	36.00
Seven-passenger Touring Car—all models		36.00	41.00
Coupe—all models		27.00	30.00
Sedan—5 passenger		37.00	42.00
Sedan—7 passenger		40.00	45.00
		In the Land	
Chevrolet 490 2-passenger Roadster—all models		15.00	17.00
Chevrolet 490 Coupe—all models		23.00	26.00
Chevrolet 490 5-passenger Touring—all models	26.50	30.00	34.00
Chevrolet 490 Sedan—all models	30.00	33.00	36.00
Chevrolet FB 2-passenger Roadster—all models	14.00	15.75	18.00
Chevrolet FB 5-passenger Touring-all models		31.50	36.00
Chevrolet FB Coupe—all models	22.50	27.00	30.00
Chevrolet FB Sedan—all models	33.00	37.00	42.00
D 1 0 D 11 11 11	19.05	15.00	17.00
Dodge 2-passenger Roadster—all models	13.25	15.00	
Dodge 5-passenger Touring Car—all models		30.00	34.00
Dodge Coupe—all models		23.00	26.00
Dodge Sedan—all models	30.00	33.00	36.00
Maxwell 2-passenger Roadster—all models	13.25	15.00	17.00
Maxwell 5-passenger Touring—all models.		30.00	34.00
Maxwell Coupe—all models.		23.00	26.00
Maxwell Sedan—all models.		33.00	36.00
The state of the s			
Overland 2-passenger Roadster-all models		15.00	17.00
Overland 5-passenger Touring-all models		30.00	34.00
Overland Coupe—all models	20.00	23.00	26.00
Overland Sedan—all models	30.00	33.00	36.00
with the state of	14.00	White Here	10.00
Nash 2-passenger Roadster—all models		15.75	18.00
Nash 7-passenger Touring—all models		36.00	41.00
Nash 5-passenger Touring Car—all models		31.50	36.00
Nash Coupe—all models		27.00	30.00
Nash Sedan—all models—5 passenger		37.00	42.00
Nash Sedan—all models—7 passenger	36.00	40.00	45.00
Studebaker, Durant, Oldsmobile—			
Two-passenger Roadster-all models	14.00	15.75	18.00
Five-passenger Touring—all models	28.00	31.50	36.00
Seven-passenger Touring—all models	32.00	36.00	41.00
Coupe—all models	22.50	27.00	30.00
Five-passenger Sedan-all models	33.00	37.00	42.00
Seven-passenger Sedan—all models		40.00	46.00
	Market Bullian	uty to the	oi modification
All cars not listed above—  Roadster—all models	non street or	ROE AND	20.00
		17.00	20.00
Five-passenger Touring—all models		34.00	39.00
Seven-passenger Touring—all models		41.00	46.00
Coupe—all models		30.00	35.00
Five-passenger Sedan—all models		45.00	50.00
Seven-passenger Sedan—all models		48.00	54.00
When ordering he sure to state name of car year model passenger and number	1		

When ordering, be sure to state name of car, year, model, passenger, and number of seat cover material.

### SEAT COVERS FOR FORD CARS



A popular priced line of Ford Seat Covers made of reliable material, selected for the purpose, and of attractive patterns. These Covers are all complete, including Door Covers, but do not include Kick Pads on Touring Cars.

No. 800-Dark Gray mixed with wide blue stripe.

No. 808—Plain mottled Tan, no stripes.

No. 805—Brown and White mixed with narrow blue pencil stripe.

STYLE No. 150-For Roadster and Touring Car.

Material Nos. 800-805-808-810.	
Roadster. Price each\$	3.80
Touring Car. Price each	2.00
Material No. 860.	
Roadster. Price each\$	3.00
Touring Car. Price each	3.00
501 P. C.	

No. 810-Tan and White mixed with narrow white stripe with green edge.

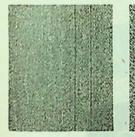
No. 860-Khaki rubberized to drill.

### STYLE No. 450-For Coupe and Sedan.

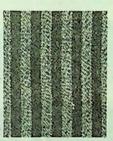
Material Nos. 800-805-808-810.

Coupe.	Price each	\$ 9.00
Sedan.	Price each	15.00

### MYAR SEAT COVERS.



No. 200 Blue Stripe on Gray No. 300 Plain Gray



No. 1213 Green Stripe on Tan No. 1215 Blue Stripe on Tan



No. 1429 Brown Stripe on Tan No. 1431 Dark Gray and Light Gray Stripe

### MAKE SATISFIED CUSTOMERS AND ARE EASY TO SELL

Myar-Perfect-Fitting Seat Covers are drafted to the exact measure of each model car and tailored in a highly specialized shop by expert workmen, yet our prices are exceptionally low. Each set is complete and includes covers for seat cushions, lazybacks, door and cowl pieces, with all hardware (posts, studs, etc.) together with full directions-ready to install. "Myartex" fabrics are 12 oz. to 14 oz. in weightall colors dyed in the yarn before weaving. They bear both mill's and factory's guarantee, to which we add our own. Myar-Perfect-Fitting Seat Covers cost no more than less representative merchandise.

	Mate	rial Nur	
2 OATHERS DO THE STORY	200	No. 1213	No. 1429
MAKE	and	and	and
WAKE	300	1215	1431
Ford—	Price	Price	Price
Roadster	\$12.50	\$16,50	\$22.50
Touring		30.00	40.00
Coupe Sedan		21.00 36.00	29.00 48.00
Group No. 1-Chevrolet "490", Overland "Lt		30.00	40.00
Roadster	14.00	19.00	28.00
Touring Coupe	24.00	35.00	44.00
Sedan	32.00	24.00 42.00	32.00 54.00
Group No 2-Auburn Briscoe Charrolat			
F.B', Cleveland, Dodge, Dort, Essex,			
Gardner, Grant, Hupmobile, Liberty,			
Maxwell, Oakland, Overland "6", Saxon, Scripps-Booth:			
Roadster	18.00	24.00	32.00
Four-passenger Touring	24.00	32.00	42.50
Five-passenger Touring Coupe	27.00	35.00 32.00	45.00 42.50
Sedan	35.00	47.50	60.00
Group No. 3-Buick, Chalmers, Chandler,			
Cole, Franklin Haynes, Hudson Jordan			
Lexington, Moon, Nash, National, Olds-			
Lexington, Moon, Nash, National, Olds- mobile, Paige, Peerless, Reo, Studebaker, Stutz, Velle, Westcott, Willys-Knight:			
Roadster		33.00	42.50
Four-passenger Touring Five-passenger Touring		43.00 47.50	50.00
Seven-passenger Touring		60.00	58.00 72.50
Coupe		45.00	57.50
Brougham Five-passenger Sedan		52.50 57.50	66.00 70.00
Seven-passenger Sedan		69.00	82.50
Group No. 4-Cadillac, Dorris, Lafayette,	1000		
Lincoln, Locomobile, Marmon, Packard, Pierce-Arrow, Premier, Winton:			
Pierce-Arrow, Premier, Winton:			
Roadster		37.50 48.00	48.00 58.00
Five-passenger Touring		52.00	63.00
Seven-passenger Touring		65,00	78.50
Coupe Brougham		50.00 57.00	62.00 70.00
Five-passenger Sedan		62.00	75.00
Seven-passenger Sedan		70.00	88.00
Note-Write for prices, any make of car		65.00	82.00
	not in	sted ab	ove.
305 P. C.			

Material No.

Material No.

### THOMAS TOP RECOVERINGS.



With Regular Style Back Curtain.



Regular Style Back Curtain Only.

Thomas Top Recoverings are easily attached; simply take out the tacks in the old recovering and back curtain and take it off, and stretch the new covering over the bows and tack it on the front and rear bows, the recovering will fit perfectly over the old bows and padding.

Instructions showing how to attach top recoverings are sent with each outfit.

A complete Top Recovering Outfit consists of roof, quarters, and rear curtain, all sewed up ready to attach. All necessary tacks, fasteners, bindings and instructions are included in each package.

We have Top Recovering Patterns for most all models of the popular cars, but should we not have the proper pattern for your particular car, a Top Recovering can be secured by sending us the old Recovering Outfit to be used as patterns. No. 106—Long Grain Single Texture Top Material makes an excellent, inexpensive top. No. 107-Ford Rubber Top Material same as originally comes upon Ford tops.

Top Recovering Outfits can be equipped with either the regular or gypsy style back curtain with celluloid curtain lights, or with two oval beveled plate glass lights with nickel frame, size 5\%4x10\%2, or with one large oblong beveled plate glass curtain light, size 7x181/2.

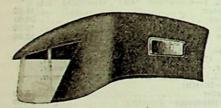
When ordering, give the name, year, model, and seating capacity of the car to be fitted, and material number.

### PRICE LIST OF TOP RECOVERING OUTFITS WITH REGULAR STYLE BACK CURTAIN.

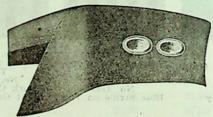
	TO DO THO HAD AND THE TANK AND THE	recrient rio.
Two-passenger cars, with celluloid window	Marterial Nos 800-805-805-81	06 & 107
Two-passenger cars, with celluloid window		\$11.00
Two-passenger cars, with 2 5\%x10\%2 oval plate glass curtain lights	ir. Price each	14.00
Two-passenger cars, with 1 7x181/2 oblong plate glass curtain light		
Four and five-passenger cars, with celluloid window	tong credit	15.00
Four and five-passenger cars, with 2 5\%x10\%2 oval glass curtain lights		
Four and five-passenger cars, with 1 7x18½ oblong plate glass curtain light		
Seven-passenger cars, with celluloid window		
Seven-passenger cars, with 2 5\%\x10\% plate glass curtain lights		
Seven-passenger cars, with 1 7x18½ oblong glass curtain light.		21.50
Seven-passenger cars, with 1 7x10/2 obiong grass curtain light		21.00

#### PRICE LIST OF REGULAR STYLE BACK CURTAIN ONLY.

	TILLICCIALL TIO.
SOFT AND	106 & 107
Equipped with celluloid window	\$ 5.50
Equipped with 2 5\(^34\x10\)\(^12\) oval plate glass curtain lights.	9.40
Equipped with 1 7x18½ oblong plate glass curtain light	11.70



With Gypsy Style Back Curtain.



Gypsy Style Back Curtain Only.

### PRICE LIST OF TOP RECOVERING OUTFITS WITH GYPSY STYLE BACK CURTAIN.

AND ADERACY TO CELL	terrar ivo.
	06 & 107
Two-passenger cars, with celluloid window	13 30
Two-passenger cars, with 2 5\%x101\%2 oval plate glass curtain lights	16.80
The passenger cars, with 2 o'Akro's o'an place glass curtain lights	
Two-passenger cars, with 1 7x18½ oblong plate glass curtain llight	19.20
Four and five-passenger cars, with celluloid window	17.30
Four and five-passenger cars, with 2 5\(^34\x10\)\(^12\) oval plate glass ccurtain lights	20.30
	22.80
a our and investiger cars, with I rate of obling place glass curtain light street and investiger cars, with I rate of obling place glass curtain light street and investiger cars, which is the obline place glass curtain light street and investiger cars, which is the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars, and in the obline place glass curtain light street and investiger cars.	44,00
Seven-passenger cars, with celluloid window	17.80
Seven-passenger cars, with celluloid window Seven-passenger cars, with 2 5\%\x10\\\\2 oval plate glass curtain lights	21.30
Seven-passenger cars, with 1 7x181/2 oblong plate glass curtain light	02.00
Seven-passenger cars, with 1 1210/2 oblong place glass curtain light	23.00

### PRICE LIST OF GYPSY STYLE BACK CURTAIN ONLY.

Coupe		Material No.
(0.07 Ob.te medianes)	They bear both	106 & 107
Equipped with celluloid window Equipped with 2 5\%x10\% oval plate glass curtain lights		6.7.00
Equipped with 0.53/ 101/ and plate gloss curtain lights		1
Equipped with 2 5% x10% oval plate glass curtain lights	*******************	11.70
Equipped with 1 7x181/2 oblong plate glass curtain light		14.00 M
A1 -10	06 P. C.	
3	V A , U,	purposed and a sold to the sol

Price Each

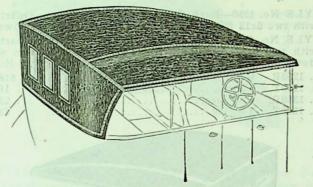
### BACK CURTAINS AND SLIP ROOF OUTFITS FOR FORD CARS

Items shown on this page are made of full weight 32-ounce Rubber Cloth, with black back. Packed in separate carton with necessary binding, tacks and nails.



STYLE No.	100-Back	Curtain	only	made	with	one	6x12
plain glass	Japanned :	frame cur	rtain	windov	W.		

, prant gro	Price Each	h
No. 100R.	Touring\$3.70	0
No. 100T.	Touring 3.70	0



STYLE No. 499-Slip Roof Outfit, including Top and Back Curtain No. 99 with three celluloid windows.

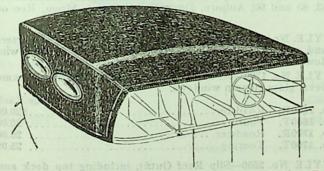
	Price Each
No. 499R.	Roadster\$7.00
No. 499T.	Touring



TOP DECKS ONLY WITH SIDE QUARTERS FOR FORDS.

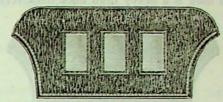
Made of 32-Ounce Rubber Cloth, Black Back.

	F	Price Each
No. 25.	Roadster	\$10.00
No. 35.	Touring	11.00



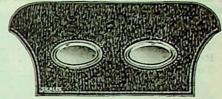
STYLE No. 700—Slip Roof Outfit complete, including Top and Back Curtain No. 300. See listed above.

and Dati	k Cuitain 140. 300. See listed above.
No. 700D	Price Each Roadster\$ 7.20
No 700T	Touring 10.00
110. 1001.	Touring
and Back	o. 800—Slip Roof Outfit complete, including Top & Curtain No. 400. See listed above.
87.00	Price Each
No. 800T.	Roadster. \$ 9.20 Touring 12.00



STYLE No. 99-Back Curtain only made with three celluloid windows.

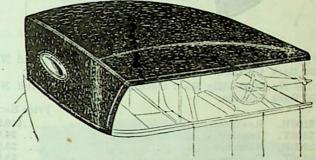
A STORES	Price Each
	Roadster\$3.20
No. 99T.	Touring 3.20



STYLE No. 300-Back Curtain only made with two 5x71/2 Japanned frame plain glass curtain windows.

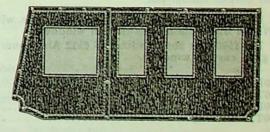
No. 300R.	Roadster	\$3.60
No. 300T.	Touring	3.60
STYLE N	To. 400-Back Curtain only made with	
Nickel fr	rame plain glass curtain windows.	
		ice Each

		Price Each
No. 4	100R.	Roadster\$5.50
No. 4	100T.	Touring 5.50



STYLE No. 500-Slip Roof Outfit, including Top and Back Curtain No. 100, with one plain glass curtain window Japanned frame 6x12

	Roadster\$ 7.50
No. 500T.	Touring 10.20



SIDE CURTAINS. Regular Style for Ford Cars, made with heavy celluloid windows.

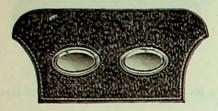
	Price Per Set
No. 65.	Roadster\$ 9.00
No. 75.	Touring
	OR OPENER CURTAINS FOR FORD CARS.
27.00	One Door Iron with Roadster Curtains.
	Three Door Irons with Touring Curtains.
	The same of the sa

Price Per Set Roadster......\$12.50 No. 76. Touring.....

### BACK CURTAINS AND SLIP ROOF OUTFITS.

For such cars only as Chevrolet 490, Baby Overland, Saxon and Maxwell.

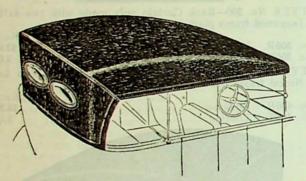
Material used is a heavy drab duck back regular Top Material, heavily rubber coated leather grain.



STYLE No. 1200-Back Curtain only with two 6x12 Nickel frame plain glass curtain windows.

STYLE No. 1300—As above with 2 Aluminum frame bevel glass curtain windows 6x12.

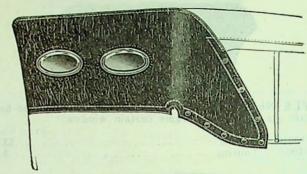
	Price Each
No. 1200R.	Roadster\$13.00
	Touring
No. 1300R.	Roadster 18.00
No. 1300T.	Touring 18.00



STYLE No. 2100—Slip Roof Outfit, including Top and No. 1200 Back Curtain.

STYLE No. 2200-Slip Roof Outfit, including Top and No. 1300 Back Curtain.

		Price Each
No. 2100R.	Roadster	\$18.90
No. 2100T.	Touring	24.00
	Roadster	
No. 2200T.	Touring	29.00

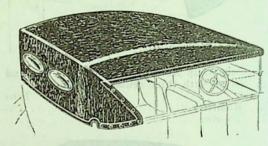


STYLE No. 1250—Back Curtain only with Gypsy Quarters with two 6x12 Nickel frame plain glass curtain windows.

STYLE No. 1350—Back Curtain only with Gypsy Quarters with two 6x12 Aluminum frame bevel glass curtain windows.

Price Each

No. 1250R.	Roadster\$18.00
	Touring. 18.00 Roadster. 23.00
	Touring



STYLE No. 2150-Slip Roof Outfit, including top and back Curtain No. 1250.

Curtam	0. 1250.
STYLE No.	. 2250-Slip Roof Outfit, including top and back
curtain N	o. 1350. Price Each
No. 2150R.	Roadster\$23.00
No. 2150T.	Touring
No. 2250R.	Roadster 28.00
No. 2250T.	Touring 34.00

#### BACK CURTAINS AND SLIP ROOF OUTFITS.

For medium priced and size Roadsters and 5-passenger cars such as Buick, Dodge, Studebaker, Oldsmobile, Hupmobile, Oakland, Velie, Willys-Knight, F. B. Chevrolet, Gardner, Overland 83, 85 and 90, Auburn, Dort, Essex, Grant, Moon, Reo or any other cars of similar size.

STYLE No	. 1400-Back	Curtain	only, regi	ular style,	with	two
6x12 Nick	sel frame plain	a glass c	urtain wi	ndows.		

STYLE No. 1500—As above, with two 6x12 Aluminum frame bevel glass curtain windows.

	Price Each
No. 1400R.	Roadster\$15.00
	Touring
No. 1500R.	Roadster 20.00
No. 1500T.	Touring 20.00

STYLE No. 2300—Slip Roof Outfit, including top deck and No. 1400 back curtain. See above, complete.

STYLE No. 2400—As above, including back curtain No. 1500. See above.

See above		D . D .
		Price Each
No. 2300R.	Roadster	\$21.00
	Touring	
	Roadster	
No. 2400T.	Touring	32.00

STYLE No. 1600—Back Curtain only with Gypsy Quarters and two 6x12 oval nickel frame plain glass curtain windows.

STYLE No. 1700—As above, with two 6x12 Aluminum frame bevel glass curtain windows.

	Price Each
No. 1600R.	Roadster\$20.00
No. 1600T.	Touring 20.00
No. 1700R.	Roadster
No. 1700T.	Touring

STYLE No. 2500—Slip Roof Outfit, including top deck and No. 1600 Back Curtain complete. See above.

STYLE No. 2600—As above, with No. 1700 Back Curtain complete. See above.

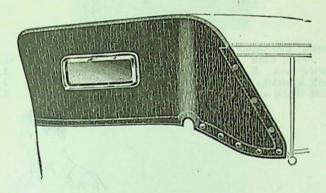
	Price Each
No. 2500R. Roadster	\$26.00
No. 2500T. Touring	32.00
No. 2600R. Roadster	31.00
No. 2600T. Touring	37.00

Made out of best quality double texture top material, drab back, semi-bright leather grain finish.

### BACK CURTAINS AND SLIP ROOF OUTFITS

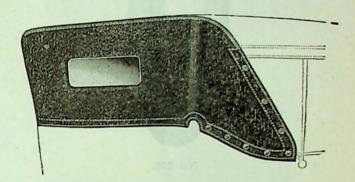
For medium priced and size Roadsters and 5-passenger cars such as Buick, Dodge, Studebaker, Oldsmobile, Hupmobile, Oakland, Velie, Willys-Knight, F. B. Chevrolet, Gardner, Overland 83, 85 and 90, Auburn, Dort, Essex, Grant, Moon, Reo or any other cars of similar size.

Made out of best quality, double texture top material, drab back, semi-bright, leather grain finish. All Back Curtains are doubled from top to bottom, the only way to make a substantial and serviceable reinforcement for heavy glass curtain windows.



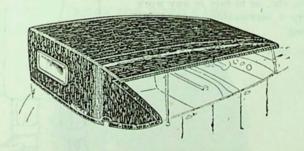
STYLE No. 1800—Back Curtain only with Gypsy Quarters and one 8x20 Aluminum frame bevel glass curtain window.

		Price Each
No. 1800R.	Roadster	\$27.00
No. 1800T.	Touring	27.00



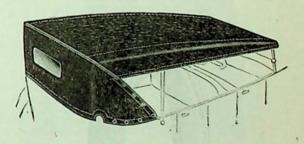
STYLE No. 1810—Back Curtain only with Gypsy Quarters and one square 7x22 concealed frame curtain window, bevel glass.

	Price Each
No. 1810R.	Roadster\$26.00
No. 1810T.	Touring



STYLE No. 2700—Slip Roof Outfit including top deck and No. 1800 back curtain, complete, see above.

		Price Each
No. 2700R.	Roadster	\$33.00
No. 2700T.	Touring	39.00



STYLE No. 2710—Slip Roof Outfit complete including Top Deck and Back Curtain No. 1810.

		Price Bach
No. 2710R.	Roadster	\$32.00
No. 2710T.	Touring .	

Packed in carton with necessary binding, fasteners, etc.





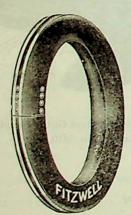


No. 500.

All Black Enamel Drill, Bright Finish.

30x3½	Cord	or	Fabric\$2.60	
			Fabric 2.70	
32x3½	Cord	or	Fabric	
			Fabric 3.00	
			Fabric	
35x5	Cord	-	Fabric 3.20	
			503 P. C.	

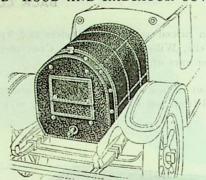
### FITZWELL TIRE COVERS.



Side and Tread Universal Type.
Drill.

	One White	Two White
Size.	Stripe, Each.	Stripes, Each.
30x3½	. 1156 \$2.95	1259 \$3.50
32x3½		1403 3.80
31x4	0.05	1406 3.80
32x4	0.00	1402 3.80
33x4	0 =0	1504 4.35
34x4	0 0 70	1508 4.35
32x4½	0	1503 4.35
33x4½	440	1807 4.90
34x4½	1.40	1802 4.90
35x4½		1808 4.90

"FORD" HOOD AND RADIATOR COVERS.



Burlap Kersey Lining.

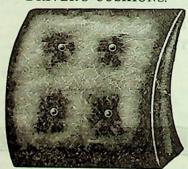
Fabric Lea. Hood and Radiator Combined.	
Price, each2753	\$5.00
Fabric Lea. Radiator Cover Only. Price, each 1506	3.00
Drill Radiator Cover Only. Price, each1253	2.50
Drill Hood and Radiator Combined. Price, each 2256	3.50



This is a double coated black apron on heavy drill measuring about 34x47, grommets in each corner, edges turned and cemented. This apron is built for extra hard service and is designed for use in garages, laboratories, etc., or in fact in any work where a serviceable apron is required.

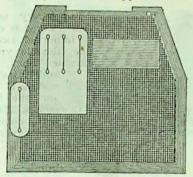


DRIVER'S CUSHIONS.



### VULTEX MATS FOR FORD CARS.

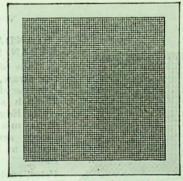
Cover up holes where brake and pedal levers come through floor, to keep out cold and mud. Wear twice as long as cheap mats. Maroon color; attractive appearance.



### OR SE TOURING CAR OR ROADSTER.

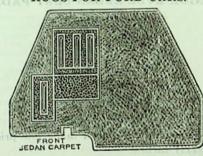
1917-22 Models.

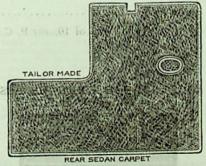
5 doz. Case, 250 lbs., Shipping Weight.
No. 126A. With Slits.....\$2.00 each



### TONNEAU OF TOURING CAR.

### RUGS FOR FORD CARS.

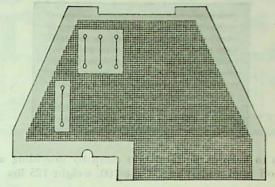




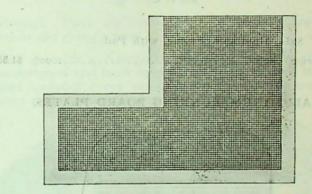
### Excellent Quality and a Perfect Fit.

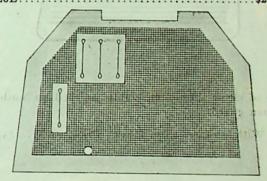
Each rug equipped with an Air-Brake Pad, which prevents all dust and cold entering car around the pedals. Made from heavy material.

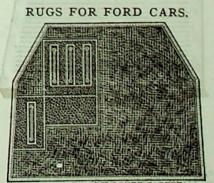
Made	from neavy material.	
For	ord Sedan, 2 pieces	3.25
For	ord Touring Car, Front. Each	3.75
		3.35



SEDAN—FRONT.
5 doz. Case, 350 lbs. Shipping Weight.
No. 126D. With Slits......\$2.50 each



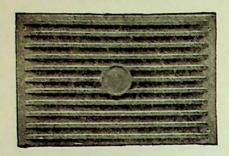




Aura C. L.	"TAILOR MADE" COUPE CARPET		TATO.
For Ford Coupe.	Each	3004	\$4.50

96 \$2.00

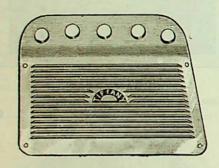
### RUNNING BOARD MATS.



Helps to keep carpet and mat clean by providing a place to rub off mud and snow. Case 100, weight 125 lbs.

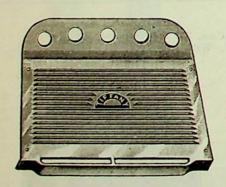
No. 237. 71/4x11 inches, Jet Black. Price, each......\$0.40

### ALUMINUM RUNNING BOARD PLATES.



 Made of clean aluminum, highly polished on borders and splash pan guard.

No. 2. With scraper. Size 71/2x9. Price, each... 1153 \$1.50

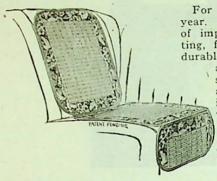


### With Scraper.

	0.		n .		***
No. 1.	Size,	10x11.	Price,	each1256	\$2.00
No. 1.	Size.	11x12.	Price.	each	2.25

### EVER-KLEAN DE LUXE SEAT PADS.

Clean, comfortable, sanitary, washable.



For every season of the year. Consists of three pieces of imported rice straw matting, flexible yet strong and durable. Back, 18 inches high

and 17 inches wide. The seat is 17 inches square and the flap is 7½x17 inches. Each strip faced with colored cretonne, three pieces sewed together. Can be folded or rolled into a neat bundle.

Price,	each .			\$2.00
Price, e	ach, ir	n lots of	10	2.00



#### STANDARD EVER-KLEAN SEAT PADS.

Made of two pieces of rice straw, 17x17 inches. Reverse side faced with 2½-inch strip of khaki cloth. Edges bound with same material, two pieces sewed together, acting as back and seat pad.

Price, each......\$1.50 354 P. C. Case lots of 10 401 P. C.

### JUNIOR EVER-KLEAN SEAT PADS.

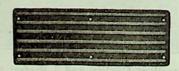


Supplies the demand for a well made low price seat pad. Two pieces, 17x17 inches.

Price, each......\$1.00

352 P. C. Case lots of 10, 403 P. C.

### ACCELERATOR HEEL PLATES.



# KAMPRITE TRAILER

# Hit the Trail With the Comfortable Kamprite Trailer

Man, oh Man, does anything quite equal the fun of a camping trip—and the ruddy health, the disgraceful appetites and the deep refreshing sleep that comes from life in the open?

It's the only real regular way to spend a vacat on—if you've never toured, you've postponed pleasure long

enough. Pack up the family and hit the trail now while the going's good.

But go with a Kamprite Trailer—because Kamprite is designed and built by practical, experienced tourists and includes every requirement for safety, convenience and comfort on a camping trip.

### Kamprite Overcomes All Camp Hardships

lt's a snug, compact outfit, dustproof and weather-proof, that follows quietly after your car over any and all roads, carrying your beds, Kamprite folding top, baggage, and camp utilities.

With your car free from luggage, you ride along until a camp site attracts you. Then a few minutes' easy work—and, presto, a cozy roadside home, water-proof, insect-proof and mosquito-proof. You can even make camp in a pouring rain without wetting the contents of the Trailer. Kamprite's adjustable features make it possible to camp on any kind of ground—often in places where other forms of camping would be unendurable.

And then crawl into the wide, clean beds where soft mattresses and real springs assure restful sleep. Man, it's the life!



Specifications—Ford size wheels and pneumatic tires— Timkin bearings, semi-elliptic springs—Brice ball and socket automatic coupler, beds for four, mat on the floor makes room for more—partition for privacy, 4x7 floor space, hammocks for clothes—dust and rainproof road cover, water and wind-proof canopy, etc.

( Tables, Camp Chairs and Other ) Camp Equipment Not Included

Retail list price, \$320.00 F. O. B. St. Louis, Mo.

Send for this folder—
"The lure of the long, long trail." It is attractively illustrated and filled with interesting descriptive matter on outdoor life in a Kamprite Trailer, It will be sent free on request.

204PC

\$60.00 cash with order, balance draft, bill of lading attached.

DEALERS ARE MAKING GOOD MONEY SELLING
THIS LINE—THE SEASON IS NOW ON



Guaranteed Rain Coats. Every coat is guaranteed to give perfect satisfaction, and a new coat will be sent to you if for any reason you wish to exchange one bought from this page.

No. 221. This Storm-Proof Coat is made out of the same quality material as the factory used in making Storm-Proof Coats for Over-Seas Soldiers. The cloth is tough, and the proofing is the finest that is ever used in Rain Coats. Cloth will withstand 200 pounds water pressure to the square inch. It is fully cemented and strapped. Convertible collar, slash pockets. 50 inches long, and sizes run from 36 to 46 inches. \$9.00

Price, each . No. 220. Same style Coat as above, but Oxford Tweed (dark grey).

Price, each
No. 450. All wool, dark Oxford Cheviot Coat, made as Style No. 221, but with patch pockets. Made like an overcoat.

Is quite heavy and can be worn either as a rain coat or an overcoat. Fully strapped and cemented. Sizes run from 36 to 46 inches.

Price, each

No. 240. Victory Storm-Proof Work Coat. This is the coat which stood up under Service conditions in France. We supply it in the regular army length of 46 inches and also in a 52-inch length for men who want a longer coat. It is made with cape over shoulders, Thompson fasteners and fly front. The cloth and rubberizing is the same as used in the soldiers' coats, and will turn the hardest storms. All seams strapped and cemented. Sizes run from 36 to 46.

AUTOMOBILE DUSTERS.

### PROTEXALL WORK SUITS.

Large and roomy. Well made. Carried in sizes 36 to 44 inches. No. 116. Best, fast close-woven Olive Khaki:

Price, each .....2353 \$3.50

No. 116. Size 46 inches:

Price, each .....2501 3.75

Lettering on Suits.

First 12 letters of any word or monogram.... 506

Additional letter, extra each.... ..... 43 .04 Three-inch letter, extra each..... 51 .05



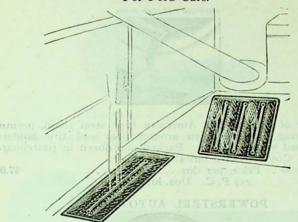


\$14.50

\$10.00

Dust-proof and washable. Lay-down collar and patch pockets. Light weight, hard twisted linen finished cloth. Made in sizes 34 to 46 inches. Larger sizes, extra price. No. 161. Tan. Price, each......1856

#### ANTI-DRAFT PEDAL SHIELDS. For Ford Cars.



PEDAL PADS FOR FORD CARS.



Close gripping, long wearing. Price, per set (3) .... 246 \$0.40

### IMPERIAL AUTO FOLDING STEEL CHAIRS.



The frame is made of the very best oval steel, and finished in rich, black japan.

The seat and back rest is upholstered in black waterproof art leather.

BB LICENSE HOLDERS FOR FORD CARS.



Made of one-piece, heavy, pressed steel, designed to be attached to either right or left side of car and to the bracket bolt that holds headlight. Complete, with 2 special bolts and washers.

Price, per dozen......2156 \$3.6

### MOTOR CLOCKS.





Paramount.

Glownite.

Both the Glownite and Paramount models are easy to attach but difficult to steal. Secured by three small bolts and nuts, may be mounted in a few moments without cutting a large hole in the instrument board.

Special insulation makes the case vibration-proof, protecting the works from shocks and jars and assuring good time-

keeping.

The "Undark" radium dial of the Glownite model shows
the time as clearly by night as in daylight, and will glow
for years

The Paramount is particularly satisfactory for motorists who do little night driving.

Made of nickel silver, the cases of Mansfield Motor Clocks will never rust, tarnish or spot. They retain their attractive appearance indefinitely.

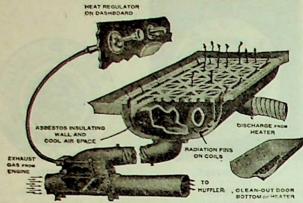
SUN SHADES FOR FORDSON TRACTORS.



### NEVER OUT FRONT LICENSE BRACKETS.

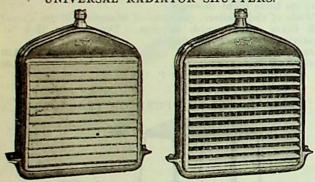


### TEMME AUTO EXHAUST HEATERS.



Mechanic can install it inside of a few hours and it stays put. No extra maintenance or loose parts to become noisy. The continuous circulation of air around efficient multiple

### UNIVERSAL RADIATOR SHUTTERS.

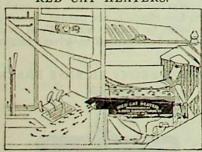


A stamped sheet metal device made up of a number of movable shutters, carried in a frame so as to completely fill the opening in the outer shell of radiator, provided with a

flange which is snugly held between outer shell and core of radiator; regulates passage of air through and around radiator.

ator.	
Price each, for Ford Cars 1917 and later	.\$ 8.50
Price each, for Maxwell 25, 1917 and later	. 12.00
Price each, for Chevrolet 490, 1917 and later	. 12.00
Price each, for Dodge 1917 and later	
Price each, for Buick B-44-45-46-47	
Price each, for Buick H-44-45-46-47-49-50	
Price, each, for Buick K-44-45-46-47-49-50	
226 P C	

### RED CAT HEATERS.



For All Ford Cars.

It makes a furnace of your exhaust manifold, does away with heavy robes and cold feet. Only fresh air comes into the car, no danger from exhaust gases, fumes or smoke. Continually brings fresh, warm air into the car. You can regulate heat by use of damper. Substantially made and finished in black baked enamel. Full directions with each Heater. Price, each \$1.10

### AMERICAN TIRE LOCK CHAINS.



Made of the flat link American type steel chain, permitting being closely drawn around tires and tire holders. Furnished without locks. Packed one dozen in pasteboard carton. Covered with imitation leather.

### POWERSTEEL AUTOWLOCKS.



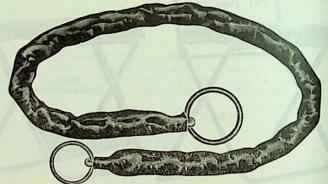
Four feet Yellow Strand wire rope.

Covered with a strong fabric, which will last practically as long as the steel.

Can be put through a wheel, and around a spring with

one hand, in five seconds. Weighs less than a pound

### BULL DOG SPARE TIRE GUARDS.



### BUCKEYE TIRE LOCKS.

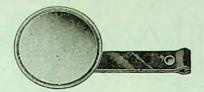


Prevent those high-priced tires from being stolen by locking them with a tire lock.

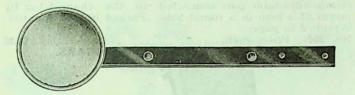
No. 2—Leather-covered cable, 36 inches long.

Price, each .....\$0.90

### MIRRORSCOPES.



Length of Bracket, 6 inches.

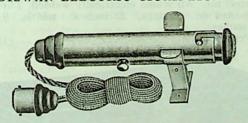


No. 309. 5-inch Truck Mirror, 13-inch Bracket. Each.. \$1.60 No. 309. 5-inch Truck Mirror, 18-inch Bracket. Hach.. 1.80 No. 309. 5-inch Truck Mirror, 24-inch Bracket. Each.. 2.00



No. 108F. 5½-inch Fender Mirror. Price, each......\$2.30

### EDISWAN ELECTRIC CIGAR LIGHTERS.



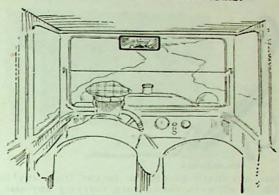
Neatly constructed in Ediswan, which makes it adapted for use on all cars. Supplied with 7 feet of cord and Ediswan plug, in either single or double contact.

No. 77. 6-8 volt, with holder complete. Each......\$2.00 No. 77B. 14-18 volt, with holder complete. Each..... 2.20

### CIGAR LIGHTER TIPS.

These tips, supplied as renewals for cigar lighters, will also fit Ediswan sockets, and by replacing the bulb with same converts any Ediswan trouble lamp into cigar lighter.

### ALL METAL BACK MIRRORS.

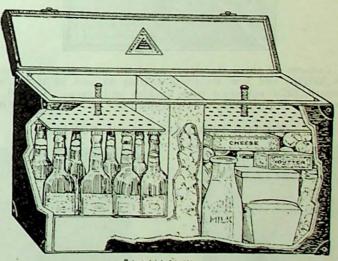


### INTERIOR DRIVE MIRRORS.



No. 4107. For Sedans, 7x2½-inch. Price, each. \$2.00 No. 4115. For Sedans, 15x2½-inch. Price, each. 3.00 337 P. C.

### TRIANGLE AUTO REFRIGERATORS.

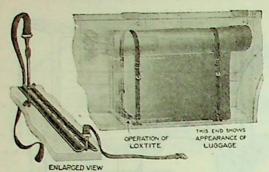


Patruted July Sth. 1921

Fastened to the running board of your car. Detachable clamp furnished. A few turns of the thumb screw fastens it securely.

Compartment is 4x11x6 inches with 10½-inch hollow arms and bottom running in both directions to extreme ends of refrigerator. Fill compartment with cracked or solid ice; a tablespoon of salt on top.

#### LOXTITE LUGGAGE CARRIERS.



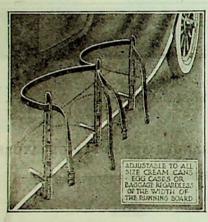
Absolute automatic protection to car from any luggage. Adaptable to all, even closed cars, carrying any size, shape or weight of luggage. Even trunks, camping outfits, etc., can be left on running board, allowing full use of all doors and running boards.

Standard size for cars with ordinary running board and for luggage extending 4 inches beyond, or smaller luggage. Straps 60 inches. Weight 1 pound. Price, each......\$2.25

Large size for cars with wide running board, or on any car for luggage extending more than 4 inches beyond or smaller luggage. Straps 70 inches. Weight 1½ pounds. Price, each \$2.50

331 P. C. Dozen lots 405 P. C.

### COMMERCIAL LUGGAGE STANDARDS.



Consists of three standards, made of semi-steel, 15 inches in height, and tow straps of belting 48 and 84 inches in length, fully equipped with buckles and clasps. Packed 1 set in wood box. Weight 14 pounds. Price, per set, 3502 \$6.00

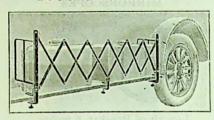
### VICTOR FORD SEAT TOOL BOXES.





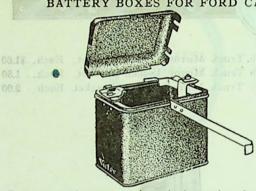
Accommodations are provided for all tools, large and small, and for inner tube. Length, 37% inches; height, 8% inches; distance from floor to angle iron support for cushion, depth 4% inches, only 31/2 inches projects from edge of cushion.

### LUGGAGE CARRIERS.



No. 250. End posts made of channel steel, 1x3/sx1/s, reinforced with the top foot on running board. Adjustable or folding part is made of %x1/8 inch steel and will open to fit any running board up to 54 inches. With malleable center clamp, adjustable part connected to the channel bar by means of a loop in a round hole. Packed in any quantity.

Wrapped in paper. No. 250. Price, each. . 1703 \$2.85 BATTERY BOXES FOR FORD CARS.



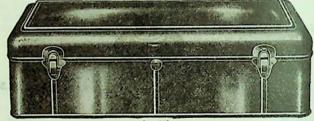
Insure your battery against slush, mud and water. For all model Fords. Made of 20-gauge metal, enameled and baked. 

 Price, each
 2106
 \$3.00

 Price, each, dozen lots
 2002
 3.00

 TOOL BOXES FOR FORD CARS.

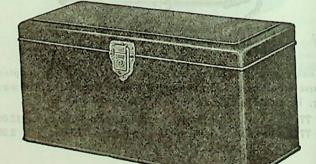
 3.00



PECRLESS

These Boxes are made of 22-gauge steel, bottom and sides; 18-gauge steel lid. All seams electrically welded. Three coats 

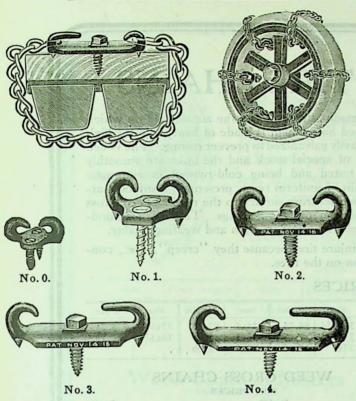
TOOL AND BATTERY BOXES.



These Boxes are made of heavy gauge steel. All seams electrically welded, and finished with three separate coats of enamel, baked on. Yale lock.

Dimensions. 812. 12x8x10½ in. deep. Wt., 6 lbs. Price, each......\$3.20 814. 14x8x10½ in. deep. Wt., 7 lbs. 3 oz. Price, each. 3.50 822. 22x9x10½ in. deep. Wt., 10 lbs. 7 oz. Price, each. 4.20

### LEADER SKID CHAIN HOLDERS.



Makes Chains easily applied in five minutes on motor cars, trucks, tractors, etc.

Do not use chain when not necessary, as you will save tires and chains. Cars can be mired down to the axle in mud or sand and chains can be readily applied without jacking up car.

No. 0. For touring cars; length, 1% inches; width, 1% inches, with two drive screws % inches long. Weight, about 11/2 oz.

No. 0.	Price.	each.				\$0.20
--------	--------	-------	--	--	--	--------

No. 1. For one-ton trucks; length, 23/4 inches; width, 13/8 inches, with two drive screws 11/2 inches long. Drive screws same as nail. Weight, each, about 4 oz.

No. 1.	Price,	each				\$0.60
--------	--------	------	--	--	--	--------

No. 2. For two-ton trucks; length, 4 inches; width 1% inches, with one lag screw 2 inches long. Weight, each, about 12 oz.

NT - O	D-1			 ¢0.75
No. 2.	Price	each.		 30.10

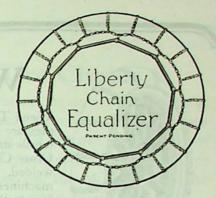
No. 3. For three-ton trucks; length, 5% inches; width, 11/2 inches, with one large lag screw 2% inches long. Weight, each, about 16 oz.

### No. 3. Price, each...... \$0.85

No. 4. For four-ton trucks; length, 7 inches; width 1% inches, with one lag screw 21/2x1/2 inches. Weight, each, about 11/2 pounds.

The second second			
No. 4.	Price.	each.	 1.00

### LIBERTY CHAIN EQUALIZER.



Floats with the chain. An endless coil spring with ten hooks. Black oil-tempered spring wire is used insuring resiliency and durability. Black enamel baked on finish. One set of two in each box.

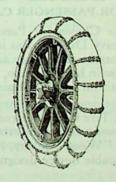
Size A.	28x3 to 30x31/2 Chains.	Per set\$1.25
Size B.	31x3½ to 34x4 Chains.	Per set 1.25
Size C.	34x41/2 to 37x5 Chains.	Per set 1.25

201 P. C. Doz. Set Lots, 336 P. C.

### "AMERICAN" EMERGENCY TWIST LINK CHAIN. In 50-ft. Length.

	Wt. per 100 ft.	Price pe	r 100 lbs.
Size	Lbs.	Regular.	Hardened.
ro-inch	. 55	\$22.00	\$27.00
¼-inch	. 90	25.0θ	32.50
re-inch	. 125	34.00	44.00
%-inch	. 175	42.00	60.00
1's-inch	. 230	55.00	75.00
	306 P. C.		

### WEED DE LUXE TIRE CHAINS.



The Reinforcing Links super-imposed on the main cross chains prevent breaking from excessive strains, increase traction and more than double the mileage.

The Twin-Loc Side Chain Link is smooth on both sides and withstands excessive strains from any

angle.

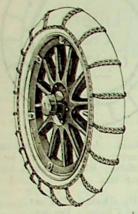
The Lever Locking Connecting
Hook draws the side chains together with little effort, is securely locked with the pressure of your thumb and remains locked under all conditions, whether the chains are loose or tight.

Size	30x3½	. Per	pair\$5.00	33x4½.	Per pair\$7.25
Size	32x3½		pair 5.50		Per pair 7.50
Size	31x4	. Per	pair 6.00	35x41/2.	Per pair 8.00
Size	32x4	. Per	pair 6.00	33x5 .	Per pair 8.50
Size	33x4	. Per	pair 6.50	34x5 .	Per pair 8.50
Size	34x4	. Per	pair 7.00	35x5 .	Per pair 9.00
Size	35x4	. Per	pair 7.50	36x5 .	Per pair 9.00
Size	32x41/2	. Per	pair 7.00		Per pair 9.75

### WEED DE LUXE CROSS CHAINS.



\$1.00	Size	4½-in. \$11.00	5-in. \$13.00
303 P. C. Dun et alot of 001	254 P. C. Doz. pr. lots 337 P. C. 100 pr. lots	331 and 5	54 P. C.



### WEED TIRE CHAINS

Weed Tire Chains are made as carefully as the automobile on which they are used. The Weed Side Chain is made of heavy wire of high tensile strength, and is heavily galvanized to prevent rusting. The Weed Cross Chains are made of special stock and the links are smoothly welded. Each link is tested and being cold-twisted in automatic machines produces a chain of uniform twist, presenting a smooth surface to the tire and a broad wearing surface to the road. Weed Cross Chains are hardened under pyrometer readings. They are diamond-hard, yet not brittle, combining great strength and wearing quality.

Weed Chains do not injure tires because they "creep", i. e., continually shift their position on the tires.

### LIST PRICES

=											Size	
	32x31/2	5.00	33x4	5.75	32x41/2	6.25	34x4½ 35x4½ 33x5	7.25	35x5	8.00	37x5 36x5½	\$ 8.75

## THE NAME "WEED" IS ON EVERY HOOK

### WEED CROSS CHAINS

#### LIST PRICES

	Per 100		Per 100
31/2-inch	\$7.25	5 -inch	. \$10.75
4 "	8.00	51/2 "	
41/2 "	9.00	- manufacture of the	

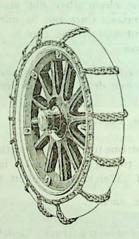
### EXTRA HEAVY

### WEED TIRE CHAINS

FOR PASSENGER CARS

Extra Heavy Weed Tire Chains for Passenger Cars are offered to meet the demand for Heavy Duty Chains in sections where unusually trying conditions of use are found. They are particularly intended for mountain work and for use in heavy gumbo, where chains are subjected to extraordinary and continual traction strains.

They are constructed throughout of heavier material than is employed in Regular Weed Tire Chains of corresponding sizes, and consequently afford greater traction on muddy roads and give longer service. The Cross Chains are of "Weed" quality, hardened, and the complete chain shows a sturdy, durable device designed for hard service.



### LIST PRICES

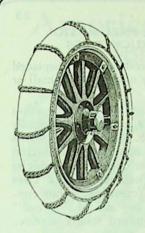
Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair
30x3½ 32x3½		31x4 32x4	\$7.50 7.50	33x4 34x4	8.00	32x4½ 34x4½ 35x4½	9.00		\$10.00		



### CROSS CHAINS

1	LI	S	T	P	R	1	C	E

			Per 100					Per 100	
3 ½-inch			.\$ 9.00	4 ½-inch			. 5	\$12.50	
4 "			. 11.00	5 "					



### Rid-O-Skid Tire Chains

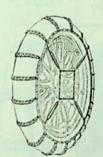
Rid-O-Skid Chains are offered as an anti-skid device to meet the requirements of those to whom initial cheapness is the chief consideration. They are necessarily of inferior quality. Haven't as many cross chains and are not heat-treated, as are those on the Weeds, and the side chains are not plated to prevent rusting.

Rid-O-Skid Chains do not injure tires because they "creep," i.e., continually shift their position on the tires.

### LIST PRICES

Size	Price per pair	Size	Price per pair	Size	Price per pair	Size	Price per pair
30x3 30x3½ 32x3½	\$2.50 2.65 2.80	31x4 32x4 33x4	\$2.90 3.00 3.10	34x4 32x4½ 34x4½	\$3.20 3.25 3.40	35x4½ 36x4½	\$3.50 3.60

### Weed Chain Adjusters



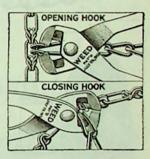
Weed Chain Adjusters consist of four or six springs (according to size), radiating from a center chain surrounding the hub, and are attached by simple hooks to the side chain. The adjuster draws the chains evenly to the tires—holds them right, fairly taut, but not tight.

### LIST PRICES

### Weed Pliers

Weed Pliers, for repairing Weed Tire Chains, easily open and close the hooks of the cross chains while the chain is on the tire.

List Price . . 65c



### Weed Chains for Motorcycles

Weed Tire Chains for Motorcycles are constructed of material particularly adapted to use on light motor vehicles, being strong but not of excessive size and weight.

A specially designed end connecting hook affords a positive lock and avoids any possibility of the chains becoming detached in service. The Cross Chains are heat-treated, affording a hard, tough, durable chain, and are brass-plated. The Side Chains are galvanized, to prevent rusting.

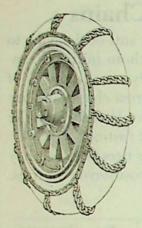
Weed Tire Chains for Motorcycles occupy little space and can be easily carried in the tool box when not in use. They are packed one chain in a small canvas bag.



LIST PRICES: Size 26 x 3, \$2.25 each Size 28 x 3, \$2.50 each

LIST PRICE OF CROSS CHAINS: Size 3-inch, 8c each





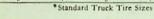
### WEED CHAINS FOR PNEUMATIC

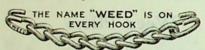
Heavy Duty Pneumatic Tires have to a considerable extent displaced Solid Tires as equipment for trucks, particularly on trucks of small or moderate capacity.

Weed Chains for Pneumatic Truck Tires afford an efficient traction and anti-skid device for this type of tire. They are made especially strong to meet the requirements of truck service. Side Chains, Cross Chains and hooks are all made of extra heavy material, to withstand excessive strains resulting from use on high-power commercial vehicles operating under heavy loads. Weed Chains for Pneumatic Truck Tires are of "Weed" type construction—constantly "creeping," thus continually changing their position on the tire. They are of "Weed" quality, the Cross Chains being hardened to afford longer service.

### LIST PRICES

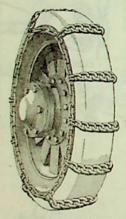
Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair
*32x41/6	\$9.00	*35x5	\$10.50	*36x6	\$11.75	*38x7	\$15.75	*42x9	\$19.75	*44x10	\$23.50
*34x41/2	9.50	36x5	10.50	38x6	12.50	*40x8	18.00		The state of the s		FREE CO.





### CROSS CHAINS-LIST PRICE PER HUNDRED

Made of Special Stock
4½-inch, \$12.50 6-inch, \$24.00 8-inch, \$38.00 10-inch, \$54.00
5- '' 16.25 7- '' 35.00 9- '' 43.00



### WEED CHAINS

FOR SOLID TIRES

Weed Chains for solid tires are an efficient traction and anti-skid device for single and dual solid truck tires. They are made especially strong and so constructed that they satisfactorily meet the requirements of heavy truck service.

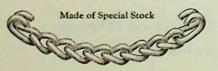


### LIST PRICES FOR SINGLE SOLID TIRES

Size	Per pair		Per pair		Per pair	Size	Per pair	Size	Per pair	Size	Per pair
32x3	\$6.00	34x31/2	\$8.50	36x4	\$11.00	34x5	\$12.50	40x5	\$15.50	40x6	\$16.00
36x3	7.00	36x31/2	9.50	34x41/2	10.50	36x5	13.50	34x6	13.00	36x7	16.00
30x31/2	7.00	32x4	9.00	36x41/2	11.50	38x5			14.00		
32x3½	7.50	34x4	10.00				Set Like	38x6	15.00	36x8	17.00

### LIST PRICES FOR DUAL SOLID TIRES

Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair	Size	Per pair
36x3 34x3½	\$12.50	36x31/2	\$15.00	36x4	\$16.00	40x4	\$18.00	38x5	\$18.00	40x6	\$21.00

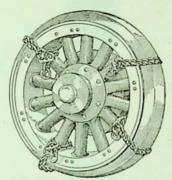


### LIST PRICES OF CROSS CHAINS

Single Solid	Dual Solid	Size	Price per 100 Single Solid	Price per 100 Dual Solid
\$9.00	\$25.00	5 - inch	\$24.00	\$35.00
19.00	30.00	7 "	30.00	38.00 40.00
	\$9.00 15.00	\$9.00 \$25.00 15.00 28.00 19.00 30.00	Single Solid         Dual Solid         Size           \$9.00         \$25.00         5 - inch           15.00         28.00         6         "           19.00         30.00         7         "	Single So'id         Dual Solid         Size         Single So'id           \$9.00         \$25.00         5 - inch         \$24.00           15.00         28.00         6 ''         27.00           19.00         30.00         7 ''         30.00

### "American" Emergency Unit Chains

FOR SINGLE AND DUAL SOLID TIRES



"American" Emergency Unit Chains are complete in themselves, requiring no expensive and troublesome attachments. No felloe plates. No spoke clamps, which for other types of unit chains must be stocked in large assortments to fit the various sizes and shapes of spokes.

"American" Emergency Unit Chains are made to fit all sizes of single and dual solid tires.

### LIST PRICES

Size	For Single For Du			ate Weight Pieces	Approximate Weight per Package of 12	
	Cond Thes	cond Thes	S. S.	D. S.	S. S	D. S.
3-inch 3½-inch 4-inch 5-inch 6-inch 7-inch	\$ .65 each .70 "' .75 " .85 " .95 "	\$ .90 each 1.10 " 1.20 " 1.40 " 1.60 "	220 lbs. 225 " 230 " 265 " 290 " 400 "	300 lbs. 400 " 450 " 580 "	26.4 lbs. 27 " 27.6 " 31.8 " 34.8 "	36 lbs. 48 " 54 " 69.6 " 73.2 "

Packed in bags of 12 pieces

### Dobbins Blow-Out Chains

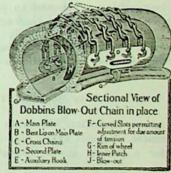
Patented June 18, 1912, and June 24, 1913

Dobbins Blow-Out Chains reinforce the shoe and hold the worst blow-out so securely that it becomes the strongest part of the tire.

Given the severest tests—500-mile runs with the worst sort of blow-outs—over rocks, through deep sand, mud and snow—Dobbins Blow-Out Chains always "make good." They securely held a very badly blown-out tire on a car that was stalled in a river bed partly made up of quicksand, and a careful examination failed to reveal a particle of sand or moisture between the shoe and the inner tube.

These tests proved that Dobbins Blow-Out Chains actually "sand and water-proof" the compartment between the patch and the tube, and place the device in a class by itself.

Dobbins Blow-Out Chains are made in two styles: For Clincher and Straightside Tires. With each chain is packed an inner patch that is placed directly over the hole or cut, on the inside of the shoe, with the sticky side next to the casing. Full directions packed with each chain. They are easily attached.



### LIST PRICE OF DOBBINS BLOW-OUT CHAINS

(Including Inner Patch)

\$1.25 each for 3 -inch tires \$1.50 each for 4 -inch tires \$1.75 each for 5 -inch tires \$1.25 each for 3½-inch tires \$1.50 each for 4½-inch tires \$1.75 each for 5½-inch tires

When ordering state whether wanted for Clincher or Straightside Tires

### SHORTEN THE SALES GAP WITH AN AC QUICK SELLER.



Spark Plugs
The Standard Quality
Plugs of the World

The AC Quick Seller is a star AC salesman, yet costs you nothing.

It stays on the job all the time, increasing your spark plug sales, due to its prominent location and convenient arrangement of stock.

It takes up very little counter space, yet it places every type and size of spark plug right at your finger tips. It has a separate section for every kind of AC Plug and every plug is visible.

### Holds 140 Spark Plugs.

The AC Quick Seller holds 140 AC Spark Plugs, enabling you to carry a supply of each of the 14 best selling types and to provide instantly the correct plugs for any make of motor car, truck, tractor, motorcycle, motorboat or stationary engine.

A chart showing the correct spark plug equipment for every motor is mounted in the AC Quick Seller for your ready reference.

### Easy to Find the Correct Plug.

This chart gives immediate, accurate information on the type of spark plug required by any motor. Special spark plug knowledge is not required. When a customer asks for plugs for a certain motor, consult the chart and find the correct plug at a glance.

### Keeps Perpetual Inventory.

By keeping a perpetual inventory of your spark plug stock, the AC Quick Seller prevents loss of sales. It shows at a glance when it is time to re-order any type of plug.

### Ties Up With Advertising

The AC Quick Seller is good looking and attracts attention because of its novel design and rich coloring. It is a complete tie-up with AC national advertising and makes your store a link in the great AC merchandising chain.

In brief, the AC Quick Seller is a well made, attractively finished sales cabinet that you will be proud to have on your counter. It is so built that every plug is visible and instantly accessible. That enables you to speed up and increase your spark plug sales. It may be locked to prevent loss or theft.

WIDTH 141/2 in.

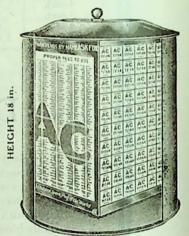
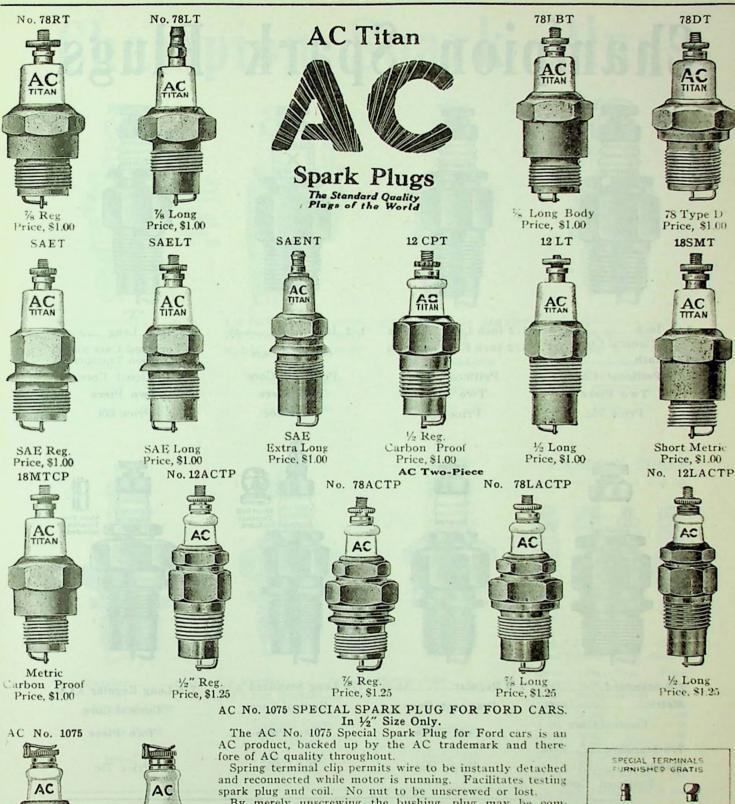


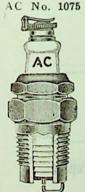
Chart and Stock



As Seen by Customer

The A C Quick Seller is yours almost for the asking. Write us or ask our salesman for details.





½" Reg. Price, \$0.75



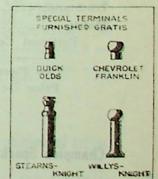
By merely unscrewing the bushing, plug may be completely disassembled. Only one gasket is used. Extra large body porcelain, to withstand hard service.

Patented CARBON PROOF porcelain. Saw tooth edges attain sufficient heat to burn oil deposits, thus offering

effective resistance to carbon.

Special shape electrode forms natural drain, preventin: oil lodging in the spark gap.

1-9 lots, 1	0 to 99 lots,	100 lots
Each.	Each.	Each.
AC Titan	583	566
AC Two Piece756	662	641
AC Two Piece Porcelains539	434	408
AC No. 1075 Plugs492	443	427
AC No. 1075 Porcelains228	217	



# Champion Spark Plugs



1/2 Inch\_\_\_\_A-13 Conical Core 1/2 Inch\_\_\_\_\_A-14 Petticoat Core Two Piece Price 75c



1/2 Inch Long \_\_\_\_ A-26 1/2 Inch Ex. Long A-34





1/2 Inch\_\_\_\_\_A-15 For Ford Cars Petticoat Core Two Piece Price 60c



1/2 Inch Long -- A-25 For Ford Cars and Fordson Tractors Petticoat Core Two Piece Price 60c







7/8 Regular\_\_\_\_AB-44

Petticoat Core

Two Piece

Price 75c



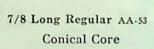


7/8 Long Standard A-53

Conical Core

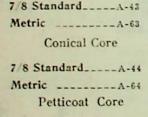
Two Piece

Price 75c



Two Piece

Price 75c



Two Piece Price 75c



### CHAMPION GASKETS

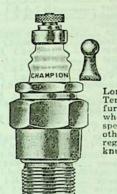
Patented copper, asbestos lined, gaskets—an ex-clusive feature of all Champion Spark Plugs.

Price, Each 4c

Champion Spark Plugs are guaranteed to give absolute satisfaction to the user, or full repair or replacement will be made.

	Each.	Each.
Champion X Plugs, A15. Champion Plugs, A25.	456	401
Champion, all other A Plugs	539	437 506

# Champion Spark Plugs



1/2 Inch Heavy\_\_\_B-13

7/8 Heavy\_\_\_\_B-43

7/8 Long Heavy\_\_B-53

3/4 Heavy\_\_\_\_B-73

Conical Core

Two Piece

Price \$1.00

Long Ball Terminal furnished when specified, otherwise regular knurl nut.



1/2 Inch Priming\_H-14 7/8 Priming \_\_\_\_\_H-44 Metric Priming \_\_ H-64

> Petticoat Core Two Piece Price \$1.00



7/8 Long Body Regular JB-43

Conical Core

One Piece Price 75c



1/2 Inch \_\_\_\_\_J-13 7/8 S. A. E .\_\_\_\_ J-43 7/8 Long S. A. E .- J-53

> Conical Core One Piece Price 75c



7/8 Regular\_\_\_\_JA-43 7/8 Regular\_\_\_\_JAS-43 Metric Aero\_\_\_\_J-63

Conical Core One Piece

Price 75c



7/8 Long Regular\_JA-53

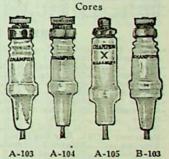
Conical Core One Piece Price 75c



Conical Core One Piece

Price 75c





Conical Petticoat "X" Conical

Cores	Plug Type	Price
A-103	A-13, A-43, A-63	\$0.40
A-104	A-14, A-44, A-64	.40
A-105	A-15	30
A-205	A-25	30
A-206	A-26, AB-44	40
A-304	A-34	40
A-503	A-53, AA-53	40
B-103	B-13,B-43,B-53	
	B-73	45
H-104	H-14,H-44,H-64	.40

Symbols ending with 3 are Conical Cores. Symbols ending with 4 are Petticoat Cores.

For the proper type of Spark Plug for every type of engine, refer to our Index Chart

Champion Spark Plugs when purchased in quantity lots may be assorted in any number of types. Cores when ordered with Plugs take the same quantity price.

1 to 99 lots,	Lots of 100,	Lots 1 to 99	Lots of 100
Each.	Each.	Each	Each.
All Type B Plugs.       601         All Type H Plugs.       706         All Type J Plugs.       532	0.50	Porcelains, A103-A104-A206-A304-A503-H104275 Porcelains, A105-A205	253 210

### Spark Plug Sizes for All Makes of Cars PASSENGER CARS

	Maxwell(% Stand.) A44 Pilot(% S.A.E.) J43
Ace(7\frac{1}{6} Stand.) A43 Fiat(7\frac{1}{6} Heavy) B4 -Allen(7\frac{1}{6} Stand.) A43 Ford(7\frac{1}{6} Heavy) B-1	-McFarlan Six Porter(% S.A.E.) J43
American(3 Reg.) JAS43-Forster(3 Lg. Bdy Reg)JB43	(to 1921) (78 Heavy) B43 Premier (78 S.A.E.) J43
American (§ Reg.) JAS43-Forster (§ Lg. Bdy Reg) JB44 Anderson (§ Stand.) A43 Apperson (§ Stand.) A43 Auburn (§ Stand.) A43 -Auburn (§ Stand.) A43 -Gardner (§ Stand.) A44 -Auburn (§ Stand.) A43 -Gardner (§ Stand.) A44 -Auburn (§ Stand.) A44 -Auburn (§ Stand.) A43 -Gardner (§ Stand.) A44	(from 1921)(7/8 Lg.SAE) J53 car(7/8 Lg. Bdy Reg) JB43
-Auburn (% Stand.) A43-Gardner (% Stand.) A4	McLaughlin Pullman(7/8 Stand.) A43
Austin(76 Lg. Bdy Reg)JB43 -Geronimo(78 Reg.) JAS4	(Canada)(% L.Rg.) AA53 -Ranger(% Reg.) JAS43
-Australian Six. (% Reg.) JA43 Gide(% Reg.) JA4	3-Mercer(7/8 S.A.E.) J+3 Regal(7/8 Stand.) A44
Bell (76 Stand ) A41-Gove (76 Stand ) A4	Canada
-Biddle(% Stand.) A44-Grant(% Stand.) A4	3-Metz (to 1921) - (1/2"Ex.Lg.) A3-1-Rickenbacher - (7/8 Lg.Std.) A53
Brewster (3 Reg.) JAS43 Gray-Dort,	" (from 1921) (78 Stand.) A43-Roamer (78 Reg.) JAS43
-Briscoe(76 Reg.) JAS43 (Can.) (76 Stand.) A4	Mitchell -(% Lg. Bdy Reg)] B43 Rock Falls (% L. Bdy Reg)] B43
" (1922) (24 I. Reg.) IA. H. C. S. (26 S.A.E.) 1434	Monroe (% Stand.) A41 Ross (% Reg.) JAS43
Cadillac(3's Reg.) JAS43-Handley	-Moon (% Lg. Bdy Reg) JB43 -R. & V.
Case (1/2 Lg. Bdy Reg) JB43 Knight (1/2 Heavy) B4	3-Moore (% Stand.) A43 Knight (% Lg. Bdy Reg) JB43 Murray (% Heavy) B43 Saxon (to 1921) (% Stand.) A43 Nash (% Lg. SAE) J53 " (from 1921) (% Lg. Sd.) A53 (% Lg. SAE) J54 " (from 1921) (% Lg. Bdy Reg) JB43
Chalmers (1/8 Lg. Bdy Reg) JB43 - Hanson (1/8 Lg. Bdy Reg) JB4	Murray (% Heavy) B43 Saxon (to 1921) (% Stand.) A43
Champion	National, -Sayers (% Lg. Bdy Reg) JB43
Chevrolet(% Lg.Std.) A53 Highlander(% Stand.) A4	4 (to 1921)(% S.A.E.) J43 Scripps-Booth_(% Lg.Std.) A53
Chrysler(78 Stand.) A43 Hollier(78 Stand.) A4	3 " (from 1921) (76 Lg.SAE) 153 - Seneca (78 S.A.E.) 143
Cleveland(78 Stand.) A43 Holmes(78 S.A.E.) J4	3 Nelson(78 Stand.) A43 -Severin(78 Reg.) JAS43
Cole (24 Reg.) JAS43 " from 1921(Metric) A6	3 Noma (% Heavy) B43-Skelton (% Stand.) A44 3-Norwalk (% S.A.E.) J43 Standard (% S.A.E.) J43
-Columbia(36 Heavy) B43-Huffman(36 Reg.) JAS4	3 Oakland (% Lg.Std.) A33 States (% Stand.) A44
Comet (3/8 Lg. Bdy Reg) JB43 Hupmobile (3/8 Reg.) JA4	3-Ogren
Comet(7\'\'_\'_\'_\'_\'_\'_\'_\'_\'_\'_\'_\'_\'	3 Oldsmobile 6(% Lg.Std.) A53-Stephens(% Lg.Reg.) JA53 3 Oldsmobile 8(% Reg.) JAS43 Stevens-Dury'a (% Stand.) A43 3 Olympian(% Reg.) JA43-Studebaker (1/2 inch.)
-Crow-Elkhart (% S.A.E.) J43-Jones (% Stand.) A4	3 Olympian (% Reg.) JA43-Studebaker
-Cunningham (% Heavy) B43-lordan (% Lg.Reg) IA5	3 Overland(/2 inch) A14 (to 1920)(/2 inch) A15
Daniels _ (% Lg. Bdy Reg) IR43 - lowett (Eng.) (Met Aero) 16	3-Owen
Daniels - [% Lg. Bdy Reg) [B43] - Jowett (Eng.) - (Met. Aero) [6] Davis - [% Reg.] [A43] - Kessler - [% Lg. Std.) A53 Detroiter - [% Reg.] [A43] - King - [% Reg.] [A54] Dixie Flyer - [% Stand.] A43 Kissel-Kar - [% Lg. Reg.] [A54]	Magnetic(76 Heavy) B43 (from 1920)(76 Stand.) A44 3 Packard(76 Lg. Bdy Reg) JB43 _Stutz(76 S.A.E.) J43
Divie Flyer (16 Stand) A43 Kissel Kar (76 La Rea) IAS	Paige- (% Stand.) A43
Dodge (% Reg.) AB44-Kline Car (% Stand.) A4	3 Detroit (% Lg. Ddy Reg)) D43 - 1 cmplat (% Cartier)
Dorris	Pan-Amer- Tulsa (% Heavy) B43
Dort (% Lg.Hvy) B53 Leach Power	ican(1/4 Lg. Bdy Reg) JB43 -Velie Parenti(1/4 Reg.) JAS43 (Mod. 48) - (1/4 Lg. Bdy Reg) JB43
Dort	3 Pathfinder (7/4 Heavy) B43 (Mod. 34)(1/8 Lg.Std.) A53
-Douglas - (% Heavy) B43 -Lexington - (% Stand.) A4 -Dupont - (% S.A.E.) J43 Liberty - (% Reg.) JA4	3 Patterson (% Reg.) JA43 Washington (% S.A.E.) J43 3-Peerless - (% Lg. Bdy Reg) JB43 Westcott (% Lg. Bdy Reg) JB43
-Floar - (% Stand.) A43 Loc mbile (%Lg. Bdy Reg)]B4	3 Pennsy
Durant         Six         (% Stand.)         A43 Loc'mbile         (% Lg. Bdy Reg)]B4           -Elear         (% Stand.)         A43 Madison         (% Stand.)         A4-           -Elgin         (% Stand.)         A43 Maibohm         (% Stand.)         A4-           Empire         (% Stand.)         A43 Marion         (% Reg.)         JA-	3-Phoenix (Eng.) (Metric) A64 Ste. Claire(Metric) A63
Empire(7/8 Stand.) A43 Marion(7/8 Reg.) JA4	3-Piedmont (1/8 Stand.) A43 Willys-Knight-(1/8 Heavy) B43
Essex(Metric) A63 Marion-Hanley (7/6 Heavy) B4 -Fageol(7/6 Reg.) JA43 Marmon(7/6 S.A.E.) J4	3-Pierce- 3 Arrow - (% Lg. Bdy Reg) JB43 - Winther (% Stand.) A43
-Fageol(% Reg.) JA43 Marmon(% S.A.E.) J4 -Ferris Six(% Reg.) JAS43	-Winton(% Heavy) B43
7 01 11 70	
L'arms b'tation army Manie	no and Lighting Engines
Farm, Stationary, Mari	ne and Lighting Engines
-Acadia (Can) (1/2 in. Hvv) B13/-Fairbanks-	Lalley-Light(1/8 Stand.) A43 -Regal(1/8 Stand.) A43
-Acadia (Can) (1/2 in. Hvv) B13/-Fairbanks-	Lalley-Light(1/8 Stand.) A43 -Regal(1/8 Stand.) A43
-Acadia (Can)(½ in. Hvy) B13-Fairbanks- Aerothrust(½ Reg.) JAS43 -Alamo(½ Lg.Std.) AS3-Fairfield(½ in. Lg.) A2 -Amphion(½ Lg.Rg.) AAS3-Fate(¼ Heavy) B4	Lalley-Light _(% Stand.) A43 Regal(% Stand.) A43
-Acadia (Can)(½ in. Hvy) B13(-Fairbanks-Aerothrust(½ Reg.) JAS43 Morse(½ inch) A1-Alamo(½ Lg.Std.) A53 -Fairfield(½ in. Lg.) A2-Amphion(½ Lg.Rg.)AA33 -Fate(½ Heavy) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) B4-Anderson	Lalley-Light _(7/8 Stand.) A43   Regal(7/8 Stand.) A43   A44   A44   A45   A45
-Acadia (Can)(½ in. Hvy) B13(-Fairbanks-Aerothrust(½ Reg.) JAS43 Morse(½ inch) A1-Alamo(½ Lg.Std.) A53 -Fairfield(½ in. Lg.) A2-Amphion(½ Lg.Rg.)AA33 -Fate(½ Heavy) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) B4-Anderson(½ inch) A13 -Fay & Bowen(½ inch) B4-Anderson(½ inch) B4-Anderson	Lalley-Light _(% Stand.) A43
-Acadia (Can)(½ in. Hvy) B13-Fairbanks- Aerothrust(26 Reg.) JAS43 -Alamo(½ Lg.Std.) A53 -Fairfield(½ in. Lg.) A2 -Amphion(½ Lg.Rg.)AA53-Faite(½ Heavy) B4 -Anderson(½ inch) A13-Fay & Bowen(½ Heavy) B4 -Appleton(Metric) A63-Fisherman(½ Lg.Std.) A5 -Arrow(½ inch) A14-Foos(½ in. Hvy) B4	Lalley-Light _(% Stand.) A43
-Acadia (Can)(½ in. Hvy) B13-Fairbanks- Aerothrust(½ Reg.) JAS43 Morse(½ inch) A1 -Alamo(½ Lg.Std.) A53-Fairfield(½ in. Lg.) A2 -Amphion(½ Lg.Rg.)AAS3-Fate(½ Heavy) B4 -Anderson(½ inch) A13-Fay & Bowen.(½ Heavy) B4 -Appleton(Metric) A63-Fisherman(½ Lg.Std.) B4 -Arrow(½ inch) A14-Foss(½ in. Hvy) B1 -Automatic(½ inch) A14-Friend(½ in. Lg.) A2 -Baker(½ inch) A14-Friend(½ in. Lg.) A2	Lalley-Light _(% Stand.) A43
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.). A53-Fairfield (½ in. Lg.) A2 -Amphion (½ lg.Rg.).AA53-Faite (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.). A5 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatte (½ inch) A13-Friend (½ in. Lg.). A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.). A2 -Baker (½ inch) A153-Fuller &	Lalley-Light (% Stand.) A43   Regal
-Acadia (Can)(½ in. Hvy) B13-Fairbanks- Aerothrust(25 Reg.) JAS43 -Alamo(½ Lg.Std.) A53 -Fairfield(½ in. Lg.) A2 -Amphion(½ lg.Rg.) AA53-Faire(½ in. Lg.) A2 -Anderson(½ inch) A13 -Fay & Bowen(½ Heavy) B4 -Anderson(½ inch) A14 -Fos	Lalley-Light _(7/8 Stand.) A43
-Acadia (Can) (½ in. Hvy) B13 - Fairbanks- Aerothrust (26 Reg.) JAS43   Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53 - Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AA53 - Faire (½ Heavy) B4 -Anderson (½ inch) A13 - Fay & Bowen. (½ Heavy) B4 -Appleton (½ inch) A14 - Foos (½ in. Hvy) B4 -Automatle (½ inch) A13 - Friend (½ in. Lg.) A2 -Baker (½ inch) A14 - Friend (½ in. Lg.) A2 -Baker (½ inch) A15 - Fuller &	Lalley-Light _(% Stand.) A43   Regal(% Stand.) A43   Regal(% Heavy) B43   "
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fay & Bowen (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Std.) A5 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Beaver (½ Lg.Std.) A53-Fuller & -Brevard (Metric) A64 -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) B43-Fuller & -Fuller & -	Lalley-Light(% Stand.) A43   Regal(% Stand.) A43   Regal(% Heavy) B43   Regal
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fay & Bowen (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Std.) A5 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Beaver (½ Lg.Std.) A53-Fuller & -Brevard (Metric) A64 -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) B43-Fuller & -Fuller & -	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen. (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B4 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Brennan (Metric) A64-Fuller & -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ in. Hvy) B13 -Gibbs (½ in. hy) B13 -Gibbs (½ inch) J -Burnett-Larsh (½ inch) A14-Gierbaltt (½ inch) J	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13 - Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53 - Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AAS3 - Fate (½ Heavy) B4 -Anderson (½ inch) A13 - Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63 - Fisherman (½ Lg.Std.) A5 -Arrow (½ inch) A14 - Foos (½ in. Hvy) B1 -Automatle (½ inch) A13 - Friend (½ in. Lg.) A2 -Baker (½ inch) A14 - Frishie (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53 -Bessemer (½ Lg. Bdy Reg.) B43 -Brennan (Metric) A64 - Fuller & -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ in. Hvy) B12 -Burnett-Larsh (½ inch) A14 -Gierholtt (½ inch) A2 -Gady (½ inch) A14 -Gray (½ inch) A2 -Gray (½ inch) A14 -Gray	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fay & Bowen (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Lg.) A2 -Baker (½ inch) A14-Frishie (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Beaver (½ Lg.Std.) A53-Fuller & -Fishie (½ in. Lg.) A2 -Beaver (½ Stand.) A43 -Bennan (Metric) A64-Fuller & -Fuller & -Full	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B4 -Arrow (½ inch) A14-Fosos (½ in. Hvy) B1 -Automatfe (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Fosos (½ in. Lg.) A2 -Fosos (½ in. Lg.) A2 -Fosos (½ in. Lg.) A2 -Friend (½ in. Lg.) A2 -Fosos .	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Fay & Bowen (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53-Failler & -Beaver (½ Lg.Std.) A53-Failler & -Beaver (½ Lg.Std.) A53-Failler & -Farenan (Metric) A64-Failler & -Farenan (Metric) A64-Failler & -Fuller & -	Lalley-Light _(% Stand.) A43 -Langstadt- Meyer(% Heavy) B43 -Lansing(% Stand.) A43 -Lansing(% Stand.) A43 -Lansing(% Stand.) A43 -Lathrop(% Lg.Std.) A53 -Lathrop(% Lg.Std.) A53 -Lathrop(% Lg.Std.) A53 -Lathrop(% Stand.) A44(% Stand.) A44(% Reg.) JAS43(% Stand.) A44(% Reg.) JAS43(% Stand.) A44(% Stand.) A44(% Stand.) A44(% Stand.) A44(% Stand.) A43(% Stand.) A44(% Stand.) A43(% Stand.) A43(% Stand.) A44(% Stand.)
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AA33-Faire (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Fuller &	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) A53 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53 -Bessemer (½ Lg.Std.) A53 -Brenan (Metric) A64-Fuller & -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ Lg. Bdy Reg.) B43 -Buffalo (½ Lg. Bdy Reg.) B43 -Cady (½ inch) A14 -Caille (½ inch) A14 -Caille (½ inch) A14 -Caille (½ inch) A14 -Caille (½ inch) A14 -Canadian (½ inch) A14 -Canadian (½ inch) A14 -Canadian (½ in. Hvy) B13 -Challenge (½ in. Hvy) B13 -Cy inch) (½ inch) A2 -Challenge (½ in. Hvy) B13 -Challenge (½ in. Hvy) B13 -Cy inch) (½ inch) (½ inch) A2 -Challenge (½ in. Hvy) B13 -Challenge (½ in. Hvy) B13 -Cy inch) (½ in. Hvy) B13 -Cy inch) (½ in. Hvy) B13 -Cy inch) (½ inch) (½ inch) (½ inch) (½ in. Hvy) B13 -Cy inch) (½ in. Hvy) B13	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.) AA33-Faire (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Baker (½ inch) A14-Frisbie (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Fuller &	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53 -Bessemer (½ Lg.Std.) A53 -Brennan (Metric) A64-Fuller & -Fuller	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53 -Bessemer (½ Lg.Std.) A53 -Brennan (Metric) A64-Fuller & -Fuller	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B4 -Automatic (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ linch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53 -Bessemer (½ Lg.Std.) A53 -Bessemer (½ Lg.Std.) A53 -Brevard (½ Stand.) A43 -Buffalo (½ Lg. Bdy Reg.) JB43 -Burnett-Larsh (½ inch) A14-Gibbs (½ inch) A2 -Cady (½ inch) A14 -Caille (½ inch) A14 -Caille (½ inch) A14 -Caille (½ inch) A14 -Canadian (½ inch) A14 -Challenge (½ inch) A15 -Challenge (½ inch) A16 -Challenge (½ inch) A17 -Challenge (½ inch) A18 -Challenge (½ inch) A19 -Curtis (Metric) A63 -Custis (Metric) A64 -Canada) (½ inch) A14 -Custis (Metric) A63 -Custis (Me	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alambo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B4 -Arrow (½ inch) A14-Friend (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53-Fuller & Johnson (½ S.A.E.) JBeaver (½ Lg.Std.) A43-Fuller & Johnson (½ in. Hvy) B1 -Brennan (Metric) A64-Fuller & -Fuller	Lalley-Light _(% Stand.) A43 -Langstadt- Meyer(% Heavy) B43 -Lansing(% Stand.) A43 -Lansing(% Stand.) A43 -Lathrop(% Lg.Std.) A53 -Lathrop(% Lg.Std.) A53 -Lathrop(% Lg.Std.) A53 -Lathrop(% Stand.) A44 -
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alambo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Rg.)AAS3-Fate (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B4 -Arrow (½ inch) A14-Friend (½ in. Hvy) B1 -Automatic (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ inch) A14-Friend (½ in. Lg.) A2 -Baker (½ Lg.Std.) A53-Fuller & Johnson (½ S.A.E.) JBeaver (½ Lg.Std.) A43-Fuller & Johnson (½ in. Hvy) B1 -Brennan (Metric) A64-Fuller & -Fuller	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Faire (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Hvy) B1 -Baker (½ Lg.Std.) A53-Friend (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Beaver (½ Lg.Std.) A53-Fuller & -Fuller & -Fu	Lalley-Light
-Acadia (Can) (½ in. Hvy) B13-Fairbanks- Aerothrust (½ Reg.) JAS43 Morse (½ inch) A1 -Alamo (½ Lg.Std.) A53-Fairfield (½ in. Lg.) A2 -Amphion (½ Lg.Std.) A53-Faire (½ Heavy) B4 -Anderson (½ inch) A13-Fay & Bowen (½ Heavy) B4 -Appleton (Metric) A63-Fisherman (½ Lg.Std.) B45 -Arrow (½ inch) A14-Foos (½ in. Hvy) B1 -Automatic (½ inch) A14-Foos (½ in. Hvy) B1 -Baker (½ Lg.Std.) A53-Friend (½ in. Lg.) A2 -Beaver (½ Lg.Std.) A53-Fuller & -Beaver (½ Lg.Std.) A53-Fuller & -Fuller & -Fu	Lalley-Light
Acadia (Can)	Lalley-Light

# Spark Plug Sizes for All Makes of Cars

		IAL CARS	
-Acason(% Heavy) B43	Douglas (% Heavy) B43	-Luedinghaus (% Heavy) B43	-St. Cloud (% Reg.) JAS43
Ace(7/8 Stand.) A43	-Duplex(% Heavy) B4: -Fageol(% keg.) JAS4: -Famous(% Stand.) A4: -Federal(% Reg.) JA4:	Maccar (74 Stand) A43	Sterling - (1/2 Lo. Bdy Reg) IR43
Acme(7/3 Stand.) A43 Ahrens	- Pageor(% Reg.) JAS-6	-Mack (74 Heavy) R43	Sandow (1/2 Lg. Bdy Reg) JB43
Fox Fire (7 Reg.) JA43	regeral(% Reg.) IA4.	-Marwin (7/4 Heavy) B43	Saniord (1/4 Stand.) A43 -Schacht (1/4 Heavy) B43
			-Schwartz (/3 Stand.) A43
-Akron(1/2 Lg.Keg)]A53 -All American(1/2 Keg.) JAS43	-Ford(1/2 inch) A15	Maxim(7/8 Reg.) JAS43	-Seagrave(76 Reg ) IAS41
All Power (1/8 Stand.) A45	-Porschler(3/2 Heavy) B43	Maxim (% Reg.) JAS43 Maxwell (% Stand.) A4- Menominee (% L. Bdy Reg.) JB43 Maxwell (% L. Bdy Reg.) JB43	"(1/4 L.keg.) JA53
-American(/8 Stand.) A43	Four Wheel	Menominee (1/2 L. Bdy Reg) JB45	-Selden (3/8 Reg.) JAS43
		Mercury(% Stand.) A43	-Seneca(/2 Stand.) A44
LaFrance (% Keg.) JASS	-Fulton(1/8 keg.) JAS4. Gabriel(1/8 L. Bdy keg.) JB43	-Meteor(1/8 Stand.) A45	-Service(3% Stand.) A43
-Armleder (% Heavy) B43	-trarrord (1'T.) (74 keg) IAS4	Moline (14 mch) A13	-Shelby(% L.Rg.) AA53 Signal(% Reg.) JAS43
-Armleder (% Heavy) B43 Atlas (% Stand.) A43 -Atterbury (% Heavy) B43	"(% L.heg.) IAS	Monarch (4 Stand) A43	Southern (7/ Heavy) PA
-Atterbury (7/8 Heavy) B43	-Gary(% Lg. Bdy keg) JB43	Moreland(% Reg.) IA43	-Southern(3/8 Heavy) B43 "(3/8 Stand.) A44
			-S & S (6) g Bdy Reg) IB43
-Avery(78 Stand.) A4-	-Globe(% Reg.) JA4.	-Napoleon (% Reg.) JAS43 Nash (% Lg. Bdy Reg) JB43	Stegeman (78 Reg.) JAS43
			Sterling (% Lg. Bdy Reg) J B43
Deggs ( a Lg. Da) region	- Granant(/S McB./ JAID	-Merson &	Stewart(/3 Stand.) A45
Bessemer(7/8 Heavy) B45	stein (Speed) (7/ Park) TASA	LeMoon_(1/8 Lg. Bdy Reg) JB43	Stoughton (% Heavy) B43
-Bethlehem, 2 T.(% Stand.) A43 5 T.(% Heavy) B43	stem (Speed)==(% Reg.) JAS43	Netco(7/4 Stand.) A45 New York(7/8 Stand.) A45	-Studebaker
-Betz(% Heavy) B43	-Grant (% Stand) A43	Niles (4 Heavy) R4	(to '20) (½ inch) A13
Bollstrom(7/8 Heavy) B43	Halin(% Stand.) A43	-Niles(% Heavy) B4. Noble(% L3. Bdy Reg)JB43	(from '20) (% Stand.) A44
-Bolte(7/8 Heavy) B45	-Hall (% Reg.) JAS43 Harvey (% Lg. Bdy Reg) JB43 Hendr ks'n (% Lg. Bdy Reg) JB43	Northway (74 S.A.E.) J43	Sullivan(% Stand.) A43
Bourne Magntc(1/8 Heavy) B43	Harvey(1/8 Lg. Bdy Reg) JB43	Northwestern (% Stand.) A43	-Superior (% Heavy) B45
Bridgeport (% Stand.) A43	Hendr'ks'n(3 Lg.Bdv Reg) JB43	-Norwalk (7/8 S.A.E.) J43	Taylor (7/4 Stand.) A43
Brinton(/8 Stand.) A43	Hewitt-Ludiow (% S.A.L.) J43	O K (% Heavy) B43	Tiffin(7/3 Lg. Bdy Reg) JB43
-Briscoe(% Reg.) JAS43 -Brockway(% Reg.) AB44	H. R. L(% Stand.) A43	Old Hickory (7/8 Stand.) A43	Titan(1/3 Lg. Bdy Reg) JB43
Buffalo (74 Stand) A43	-Huffman(7 Reg.) JAS43	Old Reliable (% L. Bdy Reg) JB43	Tower(78 Reg.) JAS43
-Casco(% Stand.) A43	Hurlburt(% Stand:) A43	Oldsmobile (7/ St. 1)	-Traffic(% Stand.) A44 -Transport(% Heavy) B43
Champion(3/8 Stand.) A43	-Independent(7/8 Reg.) JA43	-Oneida (% Stand.) A43	-Traylor (% Heavy) B43
Chicago _(7/2 Lz. Bdy Reg) JB43	-Indiana(7/k Stand.) A43	Orleans(% Reg.) JAS4	-Triangle(% Heavy) B43
Clark Tructrer (76 Heavy) B43	" (74 Stand ) A44	0 11	-Triumph (% Heavy) B43
-Clydesdale (7/6 Heavy) B43	Int'l Harvester(74 Stand) AJ3	Overland (1/2 inch) A14	" (Buffalo) (74 Heavy) B43
Collier(% Reg.) JAS43 -Columbia(% Heavy) B4- Comet(% Lg. Bdy Reg.) JB43	-Jackson(7/8 Reg.) JA43	Packard _(74 Lg. Bdy Reg) IB43	Troian (76 SAE) 143
-Columbia (% Heavy) B45	-Jones(7/8 Stand.) A43	Paige (7/2 L.T. Bdv Reg) [B43]	-Twin City (76 Stand ) A43
Comet(% Lg. Bdy Reg) JB43	-Jumbo(3/8 Stand.) A43	Parker(7/2 Lg. Bdy Reg) [B43]	-Ultimate (76 I a Hyy ) R53
-Commerce(% Stand.) A43	Kalamazoo(% Stand.) A43	-Parrett(% S.A.E.) J43	-Union(7/8 Heavy) B43
-Cook (24 Heavy) B43	-Kankakee (/3 Lg. Bdy Reg)] B43	Patriot(% Stand.) A47 -Piedmont(% Stand.) A43	-United(% Heavy) B43
-Cook(% Heavy) B43 -Corbitt(% Heavy) B43	Kearns (74 Heavy) R43	-Pierce	Universal (% Stand.) A44 U. S (% Lg. Bdy Reg) JB43
Crawford (% Lg. Bdy Reg) JB43	-Keldon(% Heavy) B43	Arrow (7/4 La Rdy Reg) IR42	Velie (76 Le Rdy Reg) IR43
-Cunningham (1/8 Heavy) B43	-Kelly-Springf'd(7/4 Heavy) B43	Pioneer (7/4 Reg.) TAS43	Vim(7/4 Reg.) JA43
-Cyclone(1/8 Lg.Std.) A53	·Keystone(7/2 Stand.) A43	Pittsburgher (76 Reg ) IAS47	Walker-John'n (78 Reg.) JAS43
Dart(7/2 Stand.) A44	-Kimball (74 Peg) TA43		
-Day-Elder(% S.A.E.) J43 -Dearborn(% Reg.) JAS43			
Defence (7/ I - Pd- Per) IP43	Kissell(% Heavy) B40	-Rainier(74 Reg.) JAS47 -Ranger(74 Reg.) JA43	Watson (% Lg. Bdy Reg) JB43
Defiance -(% Lg. Bdy Reg.) J843 De Kalb (% Stand.) A43 Denby (% Reg.) JAS43 " (Gray Beall) (% Lg. Std.) A53 Dependable (% Heavy) B43 Detroit (% Reg.) JAS43	Koehler (7/ Stand.) A43	Rapid (7/ Per) JA43	Western (1/3 Lg. Bdy Reg) JB43
Denby (74 Reg.) IAS43	L. M. C. (24 Reg.) IA43	Rapid (74 Reg.) JAS1  Reliance (74 Heavy) B43  -Reo (74 II. Lo.) A2  Renublic (74 S.A.E.) J43  -Riddle (74 Stand) A43  -Riddle (74 Stand) A43	Hickory (7/ I a Pd. Par) IP42
" (Gray Beall) (76 Lg.Std.) A53	Lambert (% Stand.) A43	-Reo(Vin I a) A2	White (Metric) A61
Dependable (% Heavy) B43	Lamson (% Stand.) A43	Republic (74 S.A.E.) 143	" Hyv(26 Lo. Bdy Reg) IB43
-Detroit (7/8 Reg.) JAS43	Landshaft(7/8 Stand.) A43	-Riddle(7/8 Stand.) A431-	Wichita (76 Stand ) A43
Diamond T(1/2 Lg. Bdy Reg) JB43	-Lange(7/8 Lg.Std.) A53	-Riddle	"(7/4 Lg.Std.) A53
Diehl(3/8 Stand.) A43	Lane(7/3 Stand.) A43	Robinson -(1/8 Lg. Bdy Reg) JB43	Wilcox-Trux (7/8 Reg.) JAS13
Dispatch (% Stand.) A43	-Larrabee-Deyo (% Heavy) B43	Rock Falls (7/8 Stand.) A43	Wilson(7/8 Stand.) A43
" (24 Lg Hyy ) B53	Little Giant (76 Stand) A43	-Ruggles (7/4 Stand.) A44- Rush (7/4 S.A.E.) J43	Wolverine (% Heavy) B43
(/8 1/8.11 / 7. / 1500)			
	TRAC		
Advance-	Dauch (7/8 Stand.) A44	Knox(7/4 Reg.) JAS431-	Ranger (76 Stand.) A43
Rumely(7/8 Reg.) JA43	-Dill(3% Stand.) A-43	LaCrosse(1/2 in. Lg.) A20	"(3/8 Reg.) JAS43
Albaugh-Dover (3/8 L.Hvy.) B53	-Eagle(½ inch) A13	Knox(% Reg.) JAS43 LaCrosse(½ in. Lg.) A20 Lauson(% Heavy) B43 -Lightfoot	Reed(78 Heavy) B43
-Alligator(½ in. Lg.) A26	Elgin(% Heavy) B43	-Lightioot	Reliable(2"Ex.Lg.) A34
-All Work (% Stand.) A44	-Emerson Brantingham_(1/2 in. Hvy) B13	(Monarch) (7/4 Lg.Hvy.) B53	
(n/ C. 1) A42			Pull(1/2 Lg. Bdy Reg) JB43 Russell(1/2 Heavy) B43
Appleton (3/8 Stand.) A43	-Farm Horse(% Heavy) B43	(Canada) (1/2 in. Lg.) A26 -	Ruston (Eng.) (% Reg.) IA43
Aultman-	-Fitch (% Heavy) B43	-Matthews (7/8 Lg.Std.) A53	Samson (3/4 Lg. Bdy Reg) 1B43
Taylor(1/8 L. Bdy Reg) JB43	Flour City (1/2 in. Lg.) A26	-Merry Garden_(7/8 Stand.) A44 -	Sandusky (1/8 Stand.) A44
" (½ in Lg.) A26	-Fordson(1/2 in. Lg. X) A25	-Midwest (7% Stand.) A44-	Shelby(7/8 Lg.Rg.) AA53
-Austin(1/2 in. Hvy) B13	-Fox(½ m. Hvy) B13	-Massey-Harris (Canada)(½ in. Lg.) A26 -Matthews(¾ Lg.Std.) A33 -Merry Garden.(¾ Stand.) A44 -Midwest(¾ Stand.) A44 -Minneapolis(¼ Heavy) B43	Spaulding (74 Stand.) A44
1 Heavy) B43	Franklin(% Heavy) B43	Mohawk (76 Stand) A43	Sprywheel (½ in. Lg.) A26
-Automotive(% Heavy) B43	-Go (National) (% Heavy) B43	Matin	Square Turn(/8 1.g.Hvy.) B33
-Avery(1/2 inch) A13	-Graham(1/8 Reg.) JA43 -Grain Belt(7/8 Heavy) B43	Universal (½ inch) A13	min Training D43
"(½ in. Lg.) A25	-Grain Belt (7/8 Heavy) B43	Neverslin A13	Topp Stewart (% Heavy) B43
" (% Stand.) A43			Toro (7/ Park TACA)
-Bailor(3/8 Heavy) B43	-Happy Farmer(1/2 in. Lg.) A25	-Nichols &	Toro(74 Reg.) JAS43 Tow Pull(74 S.A.E.) J43
Bates(7/2 Lor Std ) A53	-Harrington(1/2"Fx.Lg.) A34	Shepard (1/2 in Hyv) R131-	Tracklayer (1/2 inch) A14
Bates Stl. Mule(76 Lo Std ) A53	"(7/8 Heavy) B43	Nilson (7/8 Heavy) R43 -	Traylor(74 Heavy) B43
Bean Tr'k Pull(% Stand.) A43	Hart Parr (1/2 in. Lg.) A26 Heider (2/4 Heavy) R43	Parrett, to 1921/7/2 Heavy) B43	Triumph(74 Heavy) B43
Beeman Garden (1/2 inch) A14			Trundadi(2 men)
-Buhler'74 I.g.Std.) A53	Huber (74 Let Rdy Park Inc.)	Harnisch ferred II	Turner Simplicity (24 Heavy) B43
-Bull(% Reg.) JAS43	I. H. C. (M Heavy) P72	Harnischfeger (24 Heavy) R43	Twin City (74 Heavy) B43
Creeping Grip(7/4 Heavy) R43	-Illinois(74 Heavy) R43	-Piedmont (% Stand.) A43	Uncle Sam (24 Heavy) B43
Burn Oil (1/2"Ex.Lg.) A34	-Indiana (74 Heavy) P43	" (26 Reg ) TAS(3)-	Velie Biltwell_(74 Heavy) B43
Burn Oil(½"Ex.Lg.) A34 Case(½ L.Reg.) JA53 -Cletrac(½ S.A.E.) J43	-Jacobson (1/2 inch) A13	Pioneer (% Heavy) RAT-	Wallis Cub(% Stand.) A43
-Cletrac(74 S.A.E.) J43	-Kardell(1/3 Stand.) A43	-Plowman(76 Heavy) B43 -	Waterloo Boy-(1/2 in Lg.) A25
Common Sense(7/2 Heavy) B43	-Keck-	Pontiac(3/ inch) A14	Whitney (76 Heavy) B43
Dart(7/8 Stand.) A44	-Kinkade(1/2 inch) A14	-Post(% Heavy) R43 - -Premocar_(% Lg. Bdy Reg)JB43 -	Wilson(% Stand.) A43
- Champion Equipment	-Allinade Later (72 Inch) A14	- I temocat (/8 Lg. Bdy Reg) B43	Date, Jan. 1, 1922
The state of the state of			Date; Jan. 1, 1922

### The Champion Spark Plug Merchandiser.

The New and Modern Way of Merchandising Champion Spark Plugs

HIS case with the car index Chart attached, enables any clerk to select instantly the proper size and type of spark plug that is requested for any passenger car, commercial car, tractor, motor cycle, motor boat and farm and stationary engines. This Merchandiser is adapted for use on your counter, show case, or shelf; and it occupies but little space compared to the complete assortment that it carries. It is finely finished, and is an ornament to any store or counter-

made of metal, and each compartment will hold an original package of spark plugs. It takes but a moment to take a record of your sales or stock on hand. Conveniently arranged for quick sales, and will increase your Champion Spark Plug business.

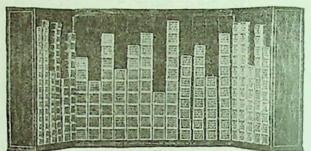
This Champion Merchandiser will be de-

livered to you with a full assortment of 100 Champion Spark Plugs and 50 Cores, representing the leading types that are in

constant demand.



Front View



Rear View

### SUGGESTED

### ASSORTMENTS

### Assortment A

Champion Spark Plugs	Cores
10-16 Inch	10A-104
30-1/2 Inch X	20A-105
10-16 Inch Long X A-25	10A-205
10-1/8 Standard A-44 10-1/8 Long Standard, A-53	10A-503
10-7/8 Long Regular, AA-53	50 Total
10-% Heavy B-43 10-% Regular JAS-43	

100 Total

### Assortment B

(For Ford and Fordson Tractor Agents.)

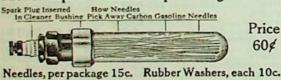
Quantity	Plugs	Quantity	Cores
70-1/2	Inch X A-15	30	A-105
30-1/2	Inch Long X, A-25	20	A-205

### Assortment C

(When dealers are agents for two or more cars, the order for 100 Champion Spark Plugs and 50 Cores should be assorted according to their sales of each make of car.)

Order must Specify one of the above Assortments to secure the Merchandiser.

### 'The Champion "Minute" Spark Plug Cleaner.



The Champion "Minute" Spark Plug Cleaner is one of the best time and trouble savers on the market. The illustration tells the story. You simply fill the tube half full of gasoline, screw the plug you want cleaned into the bushing at the end, then shake. No grease, no dirt, no trouble, and you don't even have to take the plugs apart.

It comes neatly packed in a wooden box that fits nicely in the tool case.

### Priming Plug Merchandising Case Pat, applied for



HESE cases display Cleaners and Primers so they are readily accessible for sale. Size cases 10 x 8½ x 7 inches. The Cleaner Case holds 10 Cleaners and the Priming Case 20 Priming Plugs.

Placed on your show case they will sell a large quantity of Cleaners and Primers for you.

### Spark Plug Cleaner Merchandising Case



Assortment B.	Price, each	Minute Spark Plug C Minute Spark Plug C	Cleaner. Each434 Cleaner. Lots of 10407
Assortment C	Price each		1010 01 101111111140/

### SPLITDORF SPARK PLUGS. The Plug with the Green Jacket.









110. 1111.	110, 1102,
	Price, each







No. P785.	$\frac{7}{8}$ "—18, Long	Body.	Price,	each.		\$1.00
No. P784.	%"—18, Long,	Heavy	Hex.	Price,	each	1.00



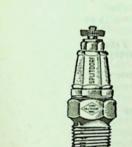
No. P165. %"-18 Long. Price, each.....\$1.00 No. P148. Auto Metric, Short. Price, each.......... 1.00





No. 141.

No	. 14	1.	1/2",	Extra	Long.	Price,	each							\$1	1.0	X	
----	------	----	-------	-------	-------	--------	------	--	--	--	--	--	--	-----	-----	---	--



No. P144.



No. P126.

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4 44
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No.	P144.	1/2". P	rice,	each		-	\$1.00
No.	P126.	Metric	Mo	torcycle.	Price,	each	1.00



No. 10190.

This plug is for use on heavy duty engines as used in the various oil fields.

No. 10190. 7/8", Extra Long, Heavy Hex. Price, each. \$1.75



No. P157.



No. P179.

No. P157.	%"-18 Motorcycle. Price, each\$1.00
No. P179.	½"-18 Reg. Ford. Price, each
No. P179.	Price, each506
No. P179.	100 lots. Price, each
No. P179	500 lots Price each



Get this attractive Spark Plug Business Getter Free by ordering 120 Splitdorf Spark Plugs. A wonderful counter display. Plugs drop down vertical position in back of cabinet. On back of case is a chart showing size plug suitable for all makes of engines.

No. 10190. Price, each	
All other Nos. Price, eac	h 581
All other Nos. in 100 lots.	Price, each569
All other Nos. in 500 lots.	Price, each 542

### GATES VULCO- (ORD BELTS

"The Standardized Fan Belt"



The standardizing of fan belt sizes accomplished by the Gates Rubber Company with Gates Vulco-Cord Belts has proved enormously successful and very profitable for the dealer.

Every Vulco-Cord Belt is oil-proof, heat-proof, non-stretch; and built, by a patented process, to conform to the pulleys.

Each belt is positively guaranteed to outwear any other leather, webbing or fabric belt.

A Gates Vulco-Cord Belt isn't made to fit just one car. It will fit as many as twenty-two different makes and models, and is labeled with the names of the cars it fits.

Each stock size in the following list will fit all cars listed under it.

STOCK SIZES
(P) indicates Passenger Car, (C) Truck, (T) Tractor

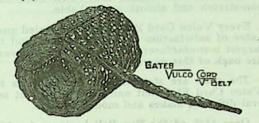
	(P) indicates Passe	enger Ca	ir, (C) Truck,	(T) Tractor		
No. MAKE YEAD	R MODEL P	RICE	No. MAKE	YEAR	MODEL	PRICE
811 Ford (P) 1911-	16 T	\$ .50	891 America	(D) 1017 01		
National (P) 1917-	19 "12"		Crw-Ells	(P) 1917-21	B,C	.05
812 Ford (P) 1917-	20 T	.50	Dodge	(P) 1915-16		
813 Ford (P) 1921-		.50	Elcar	(P) 1918-19	D "6"	
817 Liberty (P) 1920-			831 America Crw-Elk Dodge Elcar Empire Geronimo	(P) 1916-18	"4" & "6" 6A 45	
817 Liberty (P) 1920- Studebkr (P) 1922	22 10C Big & Special Six 22 Light Six 40 22 Super Six 22 Str. Rad. 10B 22 20 22 43 22 21, 22-44 to 50 22 22-34 to 37 22 HS-50, 70 1½ & 2 ton	1.10	Geronimo	(P) 1919-20	6A 45	
Studebki (F) 1922	no Tiebe Cie		Paige	(P) 1916-18 (P) 1916-19	6-36 38 39	
818 Studebkr (P) 1919-	22 Light Six	.00	Patterson	(P) 1916-19	6-36, 38, 39 "Six"	
819 Earl (P) 1922	00 5 51-	.80	Stephens	(P) 1916-17	Salient Six	
Hudson (P) 1920-	22 Super Six		Studebkr	(P) 1916-17 (P) 1916-18	Six & "4"	
Hudson (P) 1920- Kissel (P) 1920- Liberty (P) 1919	10D		Velie	(P) 1915-17	Salient Six Six & "4" 22, 28	
Liberty (P) 1919 Willys K (P) 1920	99 90		832 Buick	(P) 1916-17	D34-47	.65
Willys K. (P) 1920	00 40	00	Buick	(P) 1918	E34, 35	.65
820 Allen (P) 1919- Buick (P) 1921-	22 43	.90	833 Acme			- 00
Buick (P) 1921- Buick (P) 1921-	22 21, 22-44 10 00		Maxwell	(C) 1919-22 (P) 1915	F 11/2 ton 25 G. & D. Star	1.00
Buick (P) 1921-	00 TTC FO 70	75	Paige	(P) 1918-19	6-55	ter
821 Dix.Fly. (P) 1919- Federal (C) 1920 Jewett (P) 1922	11/ 8 2 top	.10	834 Dorris	(P) 1921-22	6.80	1 10
Federal (C) 1920	172 0 2 1011		Grant	(P) 1920-22	HX	1.10
Jewett (P) 1922 Mercer (P) 1917-	22		Maxwell	(P) 1920-22 (P) 1916-17 (C) 1920-22	25	
Overland (P) 1917-	18 STROP SE		Traffic	(C) 1920-22	C-2 ton	
Overland (P) 1918-	18 83BOE, 85 19 90B, 90 T		835 Allen	(D) 1016 10	37, 41	
Skelton (P) 1920-	22		Rethihm	(C) 1917 20	D. E	0.80
Skelton (P) 1920- Templar (P) 1917-	19 W 42		Butck	(P) 1916-17	DEA EE DA Tour	the state of
822 Biddle (P) 1916-		85	Chandler	(P) 1916-18 (C) 1917-20 (P) 1916-17 (P) 1916-22 (P) 1917-22 (P) 1921-22	D54, 55, D4 Tru All Models	CK
Corbitt (C) 1918	21 2 214 316 5 ton		Dodge	(P) 1917-22		
Corbitt (C) 1918 Hudson (P) 1916	19 Super Six		Dort	(P) 1921-22	All Models	
Interntl. (C) 1916-	22 1. 136. 2 ton		Elcar	(P) 1920-22		
Moon (P) 1918	636		Gardner	(P) 1920-22	G	
Nash (C) 1917-	22 2017-18, 3017-18		Overland	(P) 1916	84	
Notional (D) 1017	19 "6"		Overland	(P) 1916-18	75, 90R, 90T, 1s	st cere
Overland (P) 1915-	16 80, 81, 83		Republic	(C) 1921	75-34-ton	, cars
Paige (P) 1919	22 6-42, 6-55, 6-44		Wyls-Kn	(P) 1917-19	84, 88-4	
Ranger (P) 1921	-22		836 Appersp	(P) 1916-17	"6"	1.05
Saxon (P) 1916-	20 "6"		Dorris	(P) 1919-20	6-80	.1.05
Overland (P) 1915 Palge (P) 1919 Ranger (P) 1921 Saxon (P) 1916 Stutz (P) 1918	22 G, H & S		Essex	(P) 1919-22	A	
823 Chevrlt. (P) 1916-	17 490, FA	.45	Kissel	(C) 1916-18	8, 114 2 314	4 ton
824 Briscoe (P) 1916-	19 424	.45	Maxwell	(P) 1915	A ¾, 1½, 2, 3½, 25 (S. & H. Sta	rter)
Crw-Elk (P) 1920 Dort (P) 1916-	20 All Moders 18 H W 19 6-39, B, H, K 18 F, H, J 22 30-47 20 6-38, CB-6				25	· cci /
Dort (P) 1916-	20 All Moders		837 Maxwell NelsnLeN	(C) 1921-22		
825 Armledr (C) 1916- Auburn (P) 1918- Davis (P) 1916-	18 H W	.65	PlerceAr	(C) 1920-22	1½, 2½, 3½ To 2, 3½, 5 ton	011
Auburn (P) 1918-	19 6-39, B, H, K				7, 372, 3 ton	
Davis (P) 1916-	18 F. H. J		838 Bessemer Chalmrs	(D) 1919-22	J-2	1.05
Haynes (P) 1914-	22 30-47 20 6-38, CB-6 18 10A, 10B 18 C, EM 21 F, H, K 22 B Series		Columbia	(P) 1919-22	35A, B, C, D Rutenber Moto	
Kissel (P) 1915-	20 6-38, CB-6		Dorde	(P) 1919-22	Rutenber Moto	r
Liberty (P) 1916-	18 10A, 10B		Grant	(P) 1920-22 (C) 1918-20 (P) 1919	All	
Moore (P) 1916-	18 C, EM		Harroun	(P) 1919	10, 17A	
826 Elgin (P) 1917-	21 F, H, K	.85	Lar'Devo	(C) 1917-20	A, A1 2½ ton	
Maibohm (P) 1919-	22 B Series		National	(C) 1917-20 (P) 1920-22	BB	
Paige (P) 1916- Reo "4" (P) 1915- ReoSpWg(C) 1918-	22 B Series 18 6-46, 51, 55 19 R, S 22 F		U. S.	(C) 1917-22		
Reo "4" (P) 1915-	19 R, S		839 Reo "6"	(P) 1915-19	35 37	
Reospwg(C) 1918-	22 F		840 Acme	(C) 1010-19	M, N C 3½ ton 30, 40 E-2 ton	.90
827 Buick (P) 1918-		.85	Anderen	(C) 1919-22 (P) 1920-22	30 40	1.00
828 Anderson (P) 1916-	18 7 W Motor	.65	Columbia	(C) 1919	E-2 ton	
Comwith (P) 1920-	22 42 22 "4"		Diamd T	(C) 1919 (C) 1919–20	J4 LB	
Overland (P) 1920-	uu 1		Elcar	(P) 1920-22	J4, LB	
Studebkr (P) 1919-			Y		6-38	
829 Apperson (P) 1916-	20 "8"	1.15	Mack	(C) 1921-22	A, B	
Doane (C) 1919	6 ton		Moorelnd	(C) 1919-20	1½ ton	
Fulton (C) 1919	22 A C C D		Mitchell	(P) 1916-22	All Models	
Penublic (C) 1920	A P C D F		Paige	(P) 1920-22	6-66	
Tower (C) 1919	CA & FA Cont M		Republic	(C) 1920-21	19A, B, C, D &	E
Doane (C) 1919 Famous (C) 1919 Fulton (C) 1919 Republic (C) 1920 Tower (C) 1919 Wichita (C) 1921	6 ton B10, B12 22 A, C & D A, B, C, D, E C4 & E4, Cont. M K, L, M, R	LLI.	Selden	(P) 1920-22 (C) 1921-22 (C) 1919-20 (P) 1916-22 (P) 1920-21 (C) 1920-21 (C) 1918-19 (C) 1918-19 (C) 1918-19	JWB, JCB, ML,	DL
830 Anderson (P) 1919-	20 400C AE	0.5	Tower	(C) 1918-20	H, J	
Auburn (P) 1920-	22 6-39 6-51	.80	Union	(C) 1918-19	В	
Beggs (P)1920-	22 20T		841 King	(P) 1915-17	D, E, EE	.65
Columbia (D) 1010	22 7R Series		842 Maxwell Monroe	(P) 1920-21	25	1.50
Harroun (P) 1920	AA2		Monroe	(P) 1920-22	M4	1
Jordan (P) 1919-	21 M		912 Acme	(C) 1919-20	E, 5 ton	1.75
Moon (P) 1920-	22 R-20, 6-48		Fordson	(T) 1917-22	B	
Nelson (P)1916-	K, L, M, R 400C, AE 22 6-39, 6-51 22 20T 27R Series AA2 21 M 22 R-20, 6-48 21 "4"		Gramm I	(C) 1919-20 (T) 1917-22 3(C) 1919-22 (C) 1919-22	5 ton	
Roamer (P) 1920-	21 4-75		Signal	(C) 1919-22	5 ton	
Harroun (P) 1919 Jordan (P) 1919 Moon (P) 1920 Nelson (P)1916 Roamer (P) 1920 Templar (P) 1921	22 4-45		921 Mol. Uni.	(T) 1918	D	1.75
Velle (P) 1920	21 48		922 Mol.Uni.	(T) 1919-22	D	2.50
	The state of the s					

N.B.—The above list is necessarily incomplete. For complete information refer to the Gates Chart. Vulco Fint Endless Belt\* are packed in cartons—10 Belts to carton.

						~~ ~	crea co co	AL LUM.							
817 818	301 259 303 251 306 288 729 672 322 307	269 261 263 666 2×8	824 825 826	 511 485 283 261 355 334 396 518 517 483	500 & Over 453 245 317 359 451	830 831 832 833 834	Le	288 tha 100 552 384 386	n 100 to 499 525 368 362 594 656	500 & Over 494 848 848 842 563 626	838 839 840 841	Le	582 621 399		500 & Over 608 523 566 358 851
820	504 483 536 506 478 444	474	828 .	 519 489 402 376 728 692	452 344 666	000		483	459 628 764	429 592 735	912 921		1196 1192	1169 1162 1706	1128 1129 1673

# LAMINATED VILLO GRD "V"- BELT "Built to the Pulley"

Gates Vulco-Cord "V" Belt is built up of sections put together with coppered rivets. These sections overlap each other so that the belt is three-ply from end to end.



This means that it has three times the tensile strength of a single ply construction.

If one of these sections should break, a permanent repair can easily be made on the road or in the garage by removing the broken section. This can be done in less than five minutes, and the length of the belt can easily be varied in the same way.

Gates Vulco-Cord "V" Belt comes on reels—50-foot and 100-foot lengths—with a box containing a generous supply of connecting bolts. It is also furnished in belt lengths without extra charge.

Here is the complete list, with the size and length of belt required for fan drive shown opposite each model.

Complete your 100% line with Vulco Cord Laminated V Belting.

### Cars Requiring "V" Belt as Standard Equipment

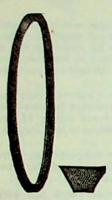
(P) indicates Passenger Car, (C) Truck, (T) Tractor MODEL SIZE MAKE YEAR MAKE YEAR MODEL SIZE Available (C) 1916 19N %x40 Overland (P) 1917-18 85-6 % x36 G, H % x42 OwenMag (P) 1917 Bessemer (C) 1918-20 M-25 % x39 %x46 Chevrolet (P) 1918-19 Packard (P) 1914 1448 % x43 "6" Comet %x36 (C) 1918 Packard (P) 1914 448, 548 % x39 Comet (P) 1918 C-51 % x36 Packard (P) 1914-15 238, 388 % x40 Corbitt (C) 1918-21 1, 11/2 ton %x38 Packard (P) 1916-18 Twin Six % x45 % x38 Packard (C) 1919-20 Cun'gham (P) 1½ E, 2E 34 x39 %x39 DiamondT(C) 1919 Packard (C) 1917-20 3E, 4E, 5E, 6E % x43 (P) 1916-17 All % x38 (P) 1919-22 Dorris Packard Twin Six 34 x48 (C) 1918 77 B %x44 Packard (P) 1920-22 Single Six Garford % x43 Geronimo (P) 1919 6E45 %x41 Paige (P) 1915 646 %x35 %x37 F9C 2 ton Glant (C) 1920 15A Parker (C) 1919 14x36 %x41 Grant (P) 1916-18 K. G Peerless (P) 1916 54 %x40 (C) 1917-18-19 15B, 20A %x36 (P) 1916 Hoover Peerless 55 %x38 (P) 1916 462 % x32 Jeffery Peerless (P) 1917-19 56 %x59 %x41 Jones (P) 1918-20 All PierceAr (P) 1913 38B %x39 Lar'Deyo (C) 1917-20 1, 11/2 ton %x38 PierceAr (C) 1917-18-19 R-8 R9 % x39 (P) 1920 6-20 %x44 Pilot (P) 1918 Leach 6-45 %x37 % x53 M Locomobl (P) 1917 (P) 1917-21 6B, C Premier % x41 %x44 R Locomobl (C) 1917 R & V Kn (P) 1920-22 J %x35 Locomobl (P) 1918 48-2 % x54 R & V Kn (P) 1920-22 R %x30 Locomobl (P) 1918 38-2 % x49 1 & 11/2 ton Republic (C) 1916-17-18 % x38 Locomobl (P) 1919-20 48 % x53 Roamer (P) 1916-17-18 RAC 56 x37 %x36 (C) 1919 LittleGnt (C) 1918-19 UU. TU Rowe % x34 (P) %x39 14.1.1 14 &1 15 ton Marion Sandow (C) 1916-17-18 % x39 McFarlan (P) 1916-17-18 % x37 StearnsK (P) 1916-18 SKL4 %x35 % x41 McFarlan (P) 1919-22 Stewart (C) 1918-20 2 ton % x38 19-50 %x36 Mercury (P) 1918-19 Union (C) 1916-17 В %x34 Meteor Hr All Models %x43 (C) 1918-19 Union C %x40 MolineKn (P) 1918-19 L %x34 (P) 1917-18 39 Velle % x39 6-66 % x38 (P) 1918 15-27 Moon Velie (P) 1915-17 % x40 Series BB-1 WhiteHky(C) 1920 National (P) 1917-19 % x37 F&H %x41 %x60 Old Relbl (C) WillysKn (P) 1916-17 86 % x42 (C) 1918 % x42 Onelda A Willys 6 (P) 1917-19 89-6 %x42 % x37 Overland (P) 1914 79 Winton 6 (P) 1916-17-18 22 %x41 % x42 Overland (P) 1915 82

### Gates Vulco-Cord V Shaped Belting

WIDTH	Less than 50 ft.	50 ft. or more	PRICE
	29901 per 100 ft.	28906 per 100 ft.	\$ .55 per ft.
	33703 per 100 ft.	32709 per 100 ft.	.65 per ft.
	40956 per 100 ft.	39953 per 100 ft.	.80 per fb

# MOULDED VICE ORD V'-BELT

An endless V Belt made like a cord tire has solved the V Belt problem.



It has put more miles and more satisfaction into a fan belt than has ever been possible before

and the motorist—your customer—will appreciate this.

The Vulco Cord "V" is made endless and is molded to exactly fit the pulley—this means no slip.

Notice the cross section. This shows the cord construction that makes the Vulco Cord Belt non-stretch and almost unbreakable.

Every Vulco Cord Belt carries a printed guarantee of satisfaction to your customer and the largest manufacturers of fan belts in the world are back of this guarantee.

The sizes are standardized the same as the Vulco Cord Flat Belt and one size will fit several different makes and models of cars.

Over 45% of the Fan Belt business for 1922 will be V-shaped Belts. The standardized Vulco Cord V makes it possible for you to get your share of this business and it's profitable.

STOCK SIZES
(P) indicates Passenger Car, (C) Truck, (T) Tractor

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No. MAKE	YEAR	MODEL P	RICE	No. MAKE	YEAR	MODEL I	PRICE
701 Chevrolt	(P) 1919-22	FB	\$1.95	707 Hupmobl	(P) 1917-22	R	1.30
Chevrolt	(C) 1920-22	T 1 ton	No. of Concession,	708 Chevrolt		490	1.70
	(C) 1919-22	T % ton		Chevrolt		FA	1.70
	(P) 1920-22	J "6"			(C) 1918-22	G % ton	
SamsonTr		M			(P) 1920-22	G % ton R-"4"	
ScrippsB		F 43		709 G. M. C.	(C) 1918-19	71B-101B	3.50
	(P) 1918-22	Salient Six		713 Winton 6		25-48	
	(P) 1917-22	"8"	2.70	Jordan	(P) 1922	MX	2.35
	(P) 1918-20	GX, H		714 Marmon	(P) 1917-19		1040-
	(P) 1918-19	45, 45A				84	2.30
	(P) 1920-22 (P) 1920-21	45B, 46, 47		Durnt"6"		B-22	
	Committee of the Commit	The state of the s		715 Commrce		E & EP	2.75
	(P) 1916-17 (P) 1916-22	TR, TT	1.60		(P) 1918-19	18, A 48	
	(P) 1916-22 (P) 1917-21	32, 34, 34B, 34D 37, 37A		724 Marmon	(P) 1920-22	84	2.55
	(P) 1918-21	6-39		Durant"6" 733 Clevelnd	(P) 1922	B-22	0.0356
	(C) 1917-22		0.00	Stewart	(C) 1918-20	6-40	2.30
	(C) 1917-22 (C) 1916-17	A, 2 ton 41, 71, 101	2.20	736 Lexingtn		1 & 11/2 ton T Gen. Drive	
	(P) 1917-18	38		737 Lexingtn		T Fan Drive	2.15
	Control of the Contro		0.70		(P) 1916-17	B, C, G	2.40
	(C) 1917-20	D&E 3, 4, 5, 6 ton		740 Reo "6"	(P) 1919-22	T 6	1.95
	(C) 1917-22	B, 1 ton	2.55	750 G. M. C.	(C) 1920-22	K-41, 71, 101	2.25
	(C) 1922	G % ton		751 G. M. C.	(C) 1920-22	K-16	2.80
	(P) 1918-22 (C) 1916-20			752 Nash	(P) 1918-22	681 & 691 Series	2.70
	(C) 1921-22	12, 13, 15 25, 33, 34			(P) 1921-22	"4"	
	(C) 1916-19	15, 16, 16AA, 25-8	1	Packard	(P) 1920-22	Single Six	mn 4 10 2
	(P) 1916-21	B, C, F			(P) 1915-20 (P) 1915-21	C3, C4, B4	2.10
	(P) 1921-22	4-43A		Winton	(P) 1916-18	A4, C6, B5, B6, 3: 22, 22A	2
	(C) 1919	10-11-11X		760 Samson	(T) 1920	M	2.00
	(P) 1919-22	6-54		762 Durant	(P) 1922	A-22	2.00
	(C) 1919-22	46		763 Lincoln	(P) 1920-22	All	2.90
	(P) 1917-19	39		767 Samson	(C) 1921-22	15 % ton	2.35
Westcott	(P) 1920	C-48, D-48		773 Maxwell	(P) 1922	25	2.00

A small stock of Vulco Endless V Belts added to your stock of Gates Vulco Cord Flat Belts makes it possible for you to supply 100% of the car owners in your city with the proper Fan Belt. You will not have to turn away a single customer through inability to serve him.

	Less than 50	50 to	100 or more		Less than	50 to 99	100 or more
701	1131	1104	1079	733	1348	1313	1281
702	1573	1548	1511	736		1246	1219
703	955	922	898	737	41.46	1384	1352
704	1297	1266	1232	740		1108	1078
705	1589	1559	1527	750	40.44	1285	1253
706	1462	1432	1403	751	7072	1619	1587
707	778	751	736	752		1542	
708	1016	987	954	753			1512
709	2033	2005	1975	700		1228	1199
713	1377	1342	1318	700		1201	1173
714	4414	1313	1282	700	444.40	1207	1176
715		1586	1559	202		1686	1651
124	4144	1439	1401	773	1000	1343 1208	1318

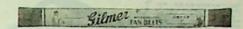




Flat top belts are packed 10 in carton. Each belt individually wrapped with the makes and models of the cars the belt will fit printed on the wrapper.

FLAT TYPE BEL	

Group	MAKE	YEAR	MODEL
1 35c	Ford National Stearns-Knight	1917-16 1917-18-19	T Highway 12 Eight
2 35c	Ford	1917-18-19-20	Т
2A 35c	Ford	1921-22	T Com. Aug.1, 1920
	Allen Buick	1915-16-17-18-19 1914	34-37-41 B24-B25-B36-B37-
	Buick	1915	B38-B55 C24-C25-C36-C37-C54- C55-D37
	Buick Chandler	1916 1916-17-18-19-20-21-22 1917-18-19-20-21-22	D54-D55 All Models
3	Dodge Dort	1920-21	12-12C-17-17S-39-39L- 49-49L
60c	Elcar Gardner Geronimo	1920-21-22 1920-21 1918	4 cvl. D-G-H-K All Models 6A-45
	Handley-Knight Overland	1921-22 1917-18	All Models 90's up to car 104,399 in 1918
	Overland Patterson	1916 1920	75 All Models
	Pilot Briscoe	1921 1916-17-18-19	6-50 B4-24
	Crow-Elkhart Dort	1920 1915-16-17-18-19-20-21	4 cyl. 10-10C-12A-12AC-15-
4	Elgin	1916-17-18-19	15S-17A-17AS
60c	Grant Hollier	1915-16 1917-18-19 1918	T. & V. Six
	Apperson	1916-17-18-19	6
	Jeffrey Moon	1917 1918-19	671 6-36
5	National Overland	1917-18-19 1915	%" 80-81
60c	Overland Paige	1916 1920-21-22	S3 6-42
	Paige Saxon	1919 1916-17-18-19-20-21	15 Small Six
	Willys-Knight Willys-Knight	1916-17 1920-21-22	84 20
	American	1917	A
	American Auburn	1917-18-19-20 1918	B Continental Motor
	Crow-Elkhart Dodge	1916-17-18-19-20 1915-16	6 cyl.
6	Empire Geronimo	1916-17-18 1917	45-50-51 4A-45
60c	Glide Madison	1916-17-18-19 1918-19	6-40
	Maxwell Patterson	1914 1916-17-18-19	6
	Stephens Studebaker	1916-17 1915-16-17-18-19	Salient 6 4 & 6
_	Velie	1916-17	22-28
60c	Buick	1918	E44-45-46-47-49-50 Late Type H44-45-46-47-49-50
	Buick Buick	1919 1920	K44-45-46-47-49-50
8	Maxwell	1916-17	25 C40 and C42
60c	Mitchell		C40 and C42
9 75e	Maxwell	1918-19	25
10	Huffman Lexington	1920-21 1917-18-19	"Minute Man Six"
60c	Reo "4" Sayers	1915-16-17-18-19 1917-18-19-20	R & S P-AP-BP-CP
	Buick	1916-17	D44-45-46-47 D34-D35
11	Buick Buick	1917 1918	E34-E35
60c	Bulck	1918	E44-E45-E47-E49-E50 Early Type
	Crow-Elkhart American	1921 1920	C & Silent Six
	Anderson Chandler	1916-17-18-19-20 1914-15	With 7W Motor All Models
	Columbia Davis	1918-19 1916-17-18-19-20	Rutenber Motor
	Haynes	1915-16-17-18-19-20-21	30-32-45-46-47-48-49 6-38 with 7W Motor 100 Point Six
12	Jackson Kissel	1920 1915-16-17-18	100 Point Six
60c	Liberty Studebaker	1916-17-18-19 1920-21[Prior to 4-15-21]	Big Six and Special
300	Noma	1919-20-21	Six Series A & B
	Paige Paige	1915 1916	6-36 6-38
	Paige	1917-18 1920	6-30 With 7W Motor
	Patterson Tulsa	1920	E1-E2-E3



### FLAT TYPE BELTS

Group	MAKE	YEAR	ACCUTATED.
	MARIA	LBAK	MODEL
13 60c	Reo	1915-16-17-18-19	M & N 6 cyl.
14 60c	Maxwell Grant	1915 1920-21	22-25 S-H Starter
-			
15 60c	Dorris Maxwell	1921 1915	6-80 22-25 G & D Starter
16	The second	IF THE STATE OF TH	1 100 TO THE R.
75c	Maxwell Monroe	1920-21 1918-19-20-21	25 M4
	Biddle Bour Davis	1916-17-18-19 1920	D&H
17	Case .	1915-16	21-SFR 25-30
60c	Chalmers Elgin	1916-17-18-19-20-21-22 1919-20-21 1917-18-19-20-21	35-A-B-C-D H & K & K-1
000	Maibohm National	1917-18-19-20-21 1921	B "Sextet"
	Stearns-Knight	1920-21	L4
	Briscoe Case	1920-21 1917	1-34 T
18	Dixie Flyer	1920	HS-70
60c	Hudson Kissel	1916-17-18-19-20-21-22 1919-20-21-22	Super Six "Custom Built Six"
	a. L L.		[Model 45]
	Columbia Davis	1920-21 1920-21	C-R 51-52-53-54-55-56-57
	Elcar Huffman	1920-21-22 1920-21	6 cyl. D-G-H-K
19	Jackson	1920	6-38 with H-S Motor
60c	Lexington	1920	S 11,000
000	Mitchell Nelson	1918-19-20-21 1920	D40-E40-E42-F40
	Paige	1921-22	D 6-66
1	Westcott	1920-21 1919-20	C38
	Climber Jeffrey	1917	T & S 472
	Marmon Mercer	1916-17 1916-17-18-19-20-21	34
20	Overland	1917-18	85-4
60c	Overland	1918-19	All model 90's after car 104,400 in 1918
	Owen Magnetic Patterson	1918-19-20 1920-21	W-42 7R Motor
	Roamer	1918	D4-75
21	Templar	1917-18-19-20 1919-20-21-22	4-45
60c	Essex	1919-20-21-22	- Cold Cold Cold
22 60c	King	1915-16-17-18	D-E-EE
	Allen Buick	1920-21 1921	43
23	Buick (6)	1922	1921-44-45-46-47-48-49-50 22-44-45-16-47-48-49-50
60c	Buick (4) King	1922 1918-19-20-21-22	22-44-45-16-47-48-49-50 22-34-35-36-37 F G H J K
000	Moon ReVere	1920 1918-19-20	6-48 C-D-E
-	Revere	4 1310-13-20	C-D-E
24 60c	Chevrolet	1916-17	490
60c	Paige	1916	6-46
60c 25	Paige Paige Paige	1916 1617 1918	6-46 6-51 6-55 1st 4150 cars
60c	Paige Paige Paige Saxon	1916 1617 1918 1920-21-22	6-46 6-51 6-55 1st 4150 cars 125—4 cyl.
60c 25 60c	Paige Paige Paige Saxon Chalmers Chalmers	1916 1617 1918 1520-21-22 1915 1916	6-46 6-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B
60c 25 60c 26	Paige Paige Paige Saxon Chalmers Chalmers Dorris	1916 1617 1918 1820-21-22 1915 1916 1919-20	6-46 5-51 6-55 lst 4150 cars 125-4 cyl. 26-26B-26C-29-32A 32B 6-80
60c 25 60c	Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige	1916 1617 1918 1520-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars
25 60c 26 60c	Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth	1916 1617 1918 1920-21-22 1915 1916 1919-20-21-22 1919-20-21-22 1918-19-20-21 1917-18-19-20	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars
25 60c 26 60c 27	Paige Paige Paige Paige Saxon Chalmers Chalmers Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer	1916 1617 1918 1920-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars All 8 HS-50
25 60c 26 60c	Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland	1916 1617 1918 1920-21-22 1915-1916 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921-1920-21 1920-21 1920-21	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-50 10B after 37500 cars 6-55 after 4150 cars All S HS-50 —Light Four
25 60c 26 60c 27	Paige Paige Paige Paige Saxon Chalmers Chalmers Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn	1916 1617 1918 1920-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921 1920-21 1920-21 1920-21	6-46 8-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars All S HS-50 —Light Four Series 30
25 60c 26 60c 27	Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elichart Dixie Flyer Overland Anderson	1916 1617 1918 1820-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1921-1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars All S HS-50 —Light Four Series 30 6-39 H & K C-7R
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Hanson Harroun	1916 1617 1918 1920-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1921-18-19-20 1921 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 8-51 8-52 1st 4150 cars 125—4 cyl. 125—4 cyl. 22B 6-80 10B after 37500 cars 6-55 after 4150 cars All S HS-50
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Hanson Harroun Jackson Jordan	1916 1617 1918 1920-21-22 1915 1916 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 25-26B-26C-29-32A 22B 6-50 10B after 37500 cars 6-55 after 4150 cars All S HS-50 —Light Four Series 30 6-39 H & K C-7R 654 with 7R Motor A-A-2 6-33 with 7R Motor M
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Harroun Jackson Jordan Moon	1916 1917 1918 1920-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-11 1920-11	6-46 8-51 8-52 8-52 8-52 8-52 8-52 8-52 8-52 8-52
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixle Flyer Overland Anderson Auburn Columbia Hanson Harroun Jackson Jordan Moon Noma Patterson	1916 1917 1918 1920-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1917-18-19-20 1911 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 8-51 6-55 1st 4150 cars 125—4 cyl. 25-26B-26C-29-32A 32B 6-50 10B after 37500 cars 6-55 after 4150 cars All SHS-50 4-Light Four Series 30 6-39 H & K C-7R 654 with 7R Motor A-A-2 6-38 with 7R Motor M 6-48 Series C 6-50
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Hanson Harroun Jackson Jordan Moon Noma Patterson Templar Velle	1916 1617 1918 1920-21-22 1915-1916 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921-19-20-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 8-51 8-52 1st 4150 cars 125—4 cyl. 25-26B-26C-29-32A 32B 6-50 10B after 37500 cars 6-55 after 4150 cars All S HS-50
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Hanson Harroun Jackson Jordan Moon Noma Patterson Pamplar	1916 1617 1918 1890-21-22 1915 1916 1919-20 1919-20-21-22 1918-19-20-21 1917-18-19-20 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 5-51 5-51 5-55 1st 4150 cars 125—4 cyl. 26-26B-26C-29-32A 32B 6-80 10B after 37500 cars 6-55 after 4150 cars All 8 HS-50 4—Light Four Series 30 6-39 H & K C-7R 654 with 7R Motor A-A-2 6-38 with 7R Motor M 6-48 Series C 6-50 4-45
60c 25 60c 26 60c 27 60c	Paige Paige Paige Paige Paige Saxon Chalmers Chalmers Dorris Liberty Paige Commonwealth Crow-Elkhart Dixie Flyer Overland Anderson Auburn Columbia Hanson Harroun Jackson Jordan Moon Noma Patterson Templar Velle	1916 1617 1918 1920-21-22 1915-1916 1919-20-21-22 1918-19-20-21 1917-18-19-20 1921-19-20-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21 1920-21	6-46 5-51 6-55 1st 4150 cars 125—4 cyl. 25-26B-26C-29-32A 32B 6-50 10B after 37500 cars 6-55 after 4150 cars All S HS-50 —Light Four Series 30 6-39 H & K C-7R 654 with 7R Motor A-A-2 6-38 with 7R Motor M 6-48 Series C 6-50 4-45

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Groups 1-2-2A, Price each .... Groups 9-16, Price each......

All other groups, Price each ....

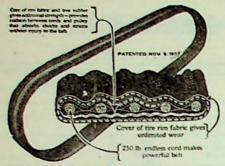
Lots 50 to 149

206 419 332

Lots 150 or more

189 383 306

#### WHITE STRIPE CORD FAN BELTS.



A core of tire fabric and live rubber gives greatest strength—provides cushion between cords and pulley which absorbs strains without injury to any part of the belt. White Stripe Cord fan belt actually makes the owner forget he has a fan belt on his car.

White Stripe Cord fan belt is patented and trademarked with a white stripe.

One dozen belts are shipped in handsome display carton.

Group 1-750
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Made	Year	Model
Ford	1911-16 .	T
National.	1917-18-19	
Stearns	1919-20	

### Group 2-Group 2A-75c.

Ford1917-18-19-20T	Ford1921-22T
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Group 3—\$1.			
Allen1915-16-17-18-19	34, 37, 41		
Buick1914	B36, B37, B38, B54, B55		
Buick1915	C24, C25, D36, D37,		
Buick1916	D54, D55		
Chandler1916-17-18-19-20	All Models		
Dodge1917-18-19-20-21			
Geronimo1918	6A-45		

### Group 4-\$1.25.

Overland191683
Overland1917-18-19-85-
90-B (4-cyl.)
Paige191915
Small 6
Saxon1916-17-
18-19"6"
Willys- Knight., 191684
Knight 191684

Group	5—\$1.		
American1917-18	Geronimo 1917 4A-45		
Auburn1918Cont. Crow- Motor	Madison1918-19		
Elkhart1916-17- 18-19-204			
Dodge1915-16 Empire1916-17-18 45—50 —51	Stephens1916-17—Salient 6 Studebaker.1916-17-		
Glide1916-17- 18-196—40	18-194 & 6 Velie1916-17-18 6		

### Group 6-\$1.25.

Buick1918-19	E&H44,	E&H45, E&H46,
	E&H47,	E&H49, E&H50
Buick1920	K44, K4	5. K46, K47
Buick1921	K47, K4	19, K50

Group	8—\$4.00.
Maxwell1916-1917	25
	C-40 & C-42
Group	9—\$4.00.
Maxwell1918-19	25

### Group 16-\$4.00.

256 P. C.		
Monroe1918-1920	 K4	
Maxwell1320-21		

#### GREATER GRIP FAN BELTS FOR FORD CARS.



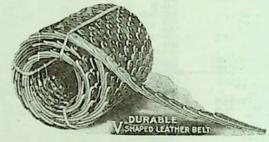
Made from extra strong single ply fabric, treated with special rubber, forced under hydraulic pressure into the fabric, after which it is vulcanized, giving the fabric long life. Edge of belt does not ravel. Practically no stretch. Grips to the pulleys. The fastener used makes it endless. No metal touches pulley. Made of one-ply treated fabric.

No. 2300. Black Label, 1911 to 1916 Fords. Price, each. \$0.25 No. 2400. Green Label, 1917 to 1920 Fords. Price, each .. .25 No. 2500. Red Label, 1921-1922 Fords. Price, each .. .25

Dozen lots 507 P. C.

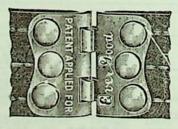
### V-SHAPED LEATHER BELTING.

Durable. V-Shaped.



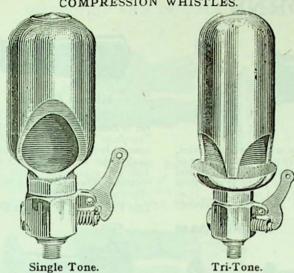
Size,	%-inch.	Price,	per	foot	\$0.60
Size,	3/4-inch.	Price,	per	foot529	.70

### EVER-GOOD FAN BELT FASTENERS.



With this Fastener, any fabric or leather endless belt can be made quick-detachable, and thus facilitate the removal and installation of belt. The Fasteners are made of cold rolled steel. Hooks are heat-treated. Fasteners curved to conform to shape of pulley. Six copper rivets with each Fastener. Width, 1-inch; connected, 11/4-inch; thickness, 84inch. Suitable for 1-inch, 11/s-inch and 11/4-inch belt.

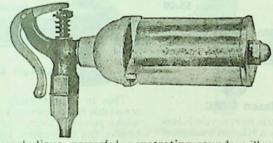
### COMPRESSION WHISTLES.



Instantly installed by screwing into priming cup opening Adapters supplied for cars without priming cups. Oper ated from driver's seat. Polished aluminum bowl; phos phor bronze valve. Made in three models.

Ford Spec. wi	th A	dapt	er.	2 .								
Tri-Tone (Chi	me)											
Adapter 7/8-in.												

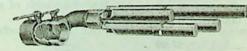
### IDEAL WARNING SIGNALS.



Has melodious, powerful, penetrating sound; will not clog or choke; no wiring or batteries needed; easy to attach Ideal Triple Tone. Length over all 8½". Price, each. \$5.50 Ideal Single Tone. Length over all, 7¾". Price, each. 4.00 Ideal Junior, with Adapter. Length over all, 63/4". Price, each Ideal Adapters for cars having no pet cocks. . Price, each



336 P. C. Doz. Lots, 402 P. C.



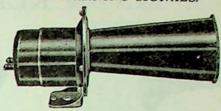
Built on the pipe organ principle. The four tones sounded together produce a pleasing chord easily heard over the din of traffic or in the country.

Easily installed, nothing to get out of order. 

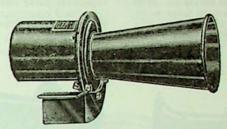
valve desired (outside diameter of exhaust pipe) or name and model of car, truck or tractor.

304 P. C. 10 or more, 356 P. C.

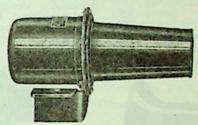
### E-A WARNING SIGNALS.



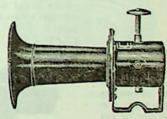
Finished all black, equipped with brackets, as illustrated Wound for 6 volts; supplied with wire and push button Mile-Away Model, 12" long, 5\(^3\)4" dia. Price, each. 6001 \\$9.00



Finish all black, equipped with brackets only. No. 9. Ford Model, 10" long, 5" dia. Price, each 4503 \$7.00

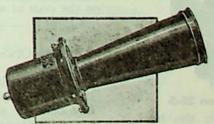


Finish all black, equipped with brackets only. No. 10. Ford Model, 9" long, dia. 41/2". Each...3504 \$5.00



Model A. Hand Horn. Black finish, 9" long, 5" dia Price, each ......2507 \$4.00

#### NORTHEAST HORNS.



The Horn that wins its way through the crowded thor oughfare and sends its warning far ahead on the winding The brushes are graphite, practically friccountry road. tionless.

Type 11974. 12 volts, complete with bracket, cord and 

### KLAXON HORNS



In warning power, dependability, workmanship and finish this Klaxon has no equal. It is built for motorists who want the best horn that money can buy. Furnished with either universal or special Cadillac bracket.

List Price.....Each \$30.00



This is a small but surprisingly powerful Klaxon for smaller cars. In spite of its low price it is thoroughly dependable in every way.

List Price.....Each \$7.75



This is a Klaxon 20-L with a swivel bracket for mounting the instrument either on the running board of a car or on the deck of a yacht or motor-

List Price..... Each \$33.00



Klaxon 20-S

Mechanically this horn is identical to the Klaxon 20-L, only instead of a long projector, it has a short one. There is practically no difference in

List Price.....Each \$30.00



#### Klaxon 12-A

This is the Economy Klaxon-the Klaxon with the orange rim. Its, deep, powerful, unmistakable note nearly matches the note of the Klaxon 20-L. Yet it costs only one third as much. Quality and reliability have not been sacrificed. The low price is due to a simplified construction requiring less labor and material. Furnished with universal underhood bracket for dash mounting. Black finish only.

List Price Each \$10.00



Klaxon 12-L

A powerful warning signal, especially designed for use under the hood. Differs in construction from the Klaxon 12-A. Black finish only.

List Price..... Each \$15.00

Klaxon 12-S

short projector for installation

under hood where there isn't enough room for the long pro-

List Price..... Each \$15.00

Klaxon 6 Deck

bracket for mounting on an automobile running board or

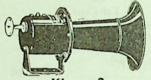
on the deck of a motorboat.

List Price..... Each \$9.25

A Klaxon 6 with a swivel

jector. Black finish only

This is a Klaxon 12-L, with a



Klaxon 3

A really dependable hand-operated signal—with the genuine Klaxon note. In every respect as carefully made as the electric Klaxons.

.....Each \$5.00 List Price.....



Klaxon 6 MC

An electric motorcycle Klaxon. Really a Klaxon 6 adapted to motorcycle use. It is furnished with either handle bar or frame bracket or with special Harley Davidson brack-

List Price.....Each \$7.75



Klaxon 5

This Klaxon is a Klaxon 6 with a "torpedo" projector, designed for use under the hood. Black finish only.

List Price.....Each \$7.00



LAXONS are regularly finished in black baked enamel. For special finishes such as black-andbrass, black-and-nickel, etc., add \$1.00 to the list price. Electric Klaxons are operated either from dry cells or storage batteries. They are regularly wound for six volts. For special voltages up to 21 volts no extra charge is made.

Push buttons and wires are furnished only with Klaxon 20 instruments. Extra for Klaxon 12 models— \$1.00 List; for Klaxon 5 and 6 models-\$.75 List.

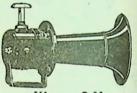
256 P. C. 50.00 or more, 338 P. C.



Klaxon 5 Ford

This Klaxon is like the Klaxon 6 but is equipped with a "torpedo" projector and a special bracket for installation under the hood on Ford cars factory equipped with self starters. Black finish only. A short wire is supplied.

List Price.....Each \$7.00



Klaxon 3-V

This Klaxon is the same as the Klaxon 3 except that it has a vertical instead of a horizontal push rod.

List Price.....Each \$5.00



This is a practically indestructible hand-operated signal with a powerful tone, for use on trucks, fire apparatus, railway section cars and motorboats. Black finish only.

List Price..... Each \$12.00



A hand operated automobile Klaxon furnished with brackets for mounting either on handlebar, frame, or tank of motorcycle.

List Price..... Each \$4.75

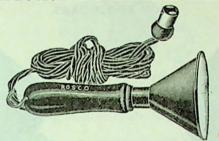


Klaxon 3-V-MC

This Klaxon is a Klaxon 3-MC with a vertical instead of a horizontal push rod.

List Price..... Each \$4.75

INSPECTION AND TROUBLE LAMPS.



Reflector Lamp.

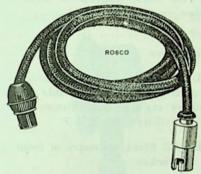
Wired complete, with 10 feet of cord. Ediswan socket and bulb with plug, double conection. No. 1076. Complete with Lamp and Plug. Each....\$1.60



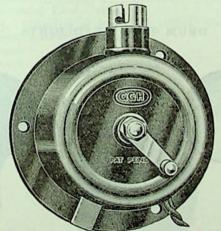
Complete with 10 feet of wire, Ediswan socket and bulb with plug, double connection.

No. 1171. Lamp and Plug. Price, each............\$1.30

#### TROUBLE FINDERS.



#### REELEX EXTENSION REEL TROUBLE LAMPS.



Combination Bracket-Light and Extension Trouble or Portable Light.

Makes repairing by night as easy as by day. Equally handy in the garage or on a camping trip. 12-foot Extension Portable Light to any part of the car. Cord quickly reeled back into casing, always connected to the lighting circuit. No Springs to break.

DOME LAMPS.



Holophane Glass.

Wired complete in nickel finish.

No. 60-E.	Ediswan	3"	Glass.	Price,	each\$2.20
No. 60-E.	Ediswan	4"	Glass.	Price,	each 2.50
No. 60-E.	Ediswan	5"	Glass.	Price.	each 2.90



Frosted Glass.

Furnished with a shallow clear or frosted glass.

No. 60-F. Ediswan Base, 3" Glass, less Bulb. Each.. \$2.20 No. 60-F. Ediswan Base, 4" Glass, less Bulb. Each.. 2.50



Cut Star.

No. 60-S. 3" Glass Ediswan Base, less Bulb. Each...\$2.70 No. 60-S. 4" Glass Ediswan Base, less Bulb. Each... 3.00



Flush Type.

No. 260-B. 3" Glass Ediswan, less Bulb. Each.....\$2.50

Any of the Dome Lamps can be furnished with an individual Switch at \$0.50 extra.

#### SQUARE C ELECTRIC HEADLIGHTS



With full bell body. Polished silver-plated parabolic reflector. Adjustable focusing device on outside of lamp. Dust and water-proof Ediswan connections and sockets. 15 C. P. 6-8 volt bulbs can be equipped with auxiliary bulb and wiring for dimming attachment at slight additional cost.

Model 800. Diameter of front, 11 inches; extreme depth, 6 inches Bracket centers, 814, 914 inches. 

#### SQUARE C TAIL LIGHTS.



With removable lens, furnished with cut-out plug. 2 C. P. 6-8-volt Mazda Bulb, Ruby Semaphore Lens, white sidelight

Model 306. All black; diameter of front, 3% inches; diameter of Ruby Semaphore, 31/4 inches.

	ready Cemaphore, 574 mentes	
Price.	each	\$1.00
Price.	each, in doz. lots	1.00

#### RED RUBY LENS.

#### SQUARE C GAS HEADLIGHTS.

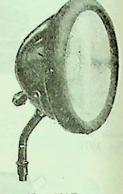


Made for trucks and commercial vehicles. Equipped with short focus. Lead glass mirror and front, silver-plated reflector; quick removable lens mirror; front reflector and door " glass.

Model 14. All black. Diameter of front, 10 inches. Extreme height, 101/2 inches. Extreme depth, 71/2 inches, Bracket centers, 8-81/4 inches.

### SQUARE C ELECTRIC HEAD LIGHTS FOR FORD CARS.





No. 520

No. 520B

Especially designed for Ford cars, 1915 to 1920. Heavy silver plated parabolic reflector, adjustable focusing device on the outside of lamp. Ediswan connector and sockets. 15 C. P., 9 volt bulbs.

Model 520. All black, diagram of front 9 inches, props centers 7 inches.

Price, per pair, in doz. pair lots......3751

Model 520B. For Ford cars using double bulb equipment Heavy silver-plated reflector, adjustable focusing device on inside of lamp for main bulb. Ediswan connectors. Main bulb 15 C. P., auxiliary bulb 2 C P.

Model 520B. All Black, diameter of front 9 inches. Extreme depth 51/2 inches.

#### DRUM TYPE HEADLIGHTS FOR FORD CARS.





Front

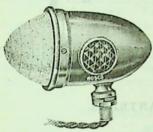
Back

Will take an 81/8 Ford prismatic lens. These are special heavy brackets and stems do not require tie rods. No. 710F. 9%" lamp furnished with props and stems as shown ready to attach to all Ford models. Door brass nickel-plated, reflector brass silver-plated, body steel black

#### SIDE LAMPS FOR SEDAN CARS.



#### TORPEDO ELECTRIC SIDE LAMPS.

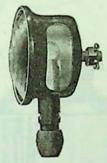


#### With Red and Green Side View Lenses.

Front lens, size  $2\frac{1}{2}$  inches. Side view lens, 1 inch. Size over all,  $2\frac{1}{2}x4\frac{1}{2}$  inches.

No.	1299.	Втаск and nickel. Per pair\$6.00	
No.	1299.	All nickel. Per pair 6.50	
		334 P. C.	

#### SQUARE C ELECTRIC TAIL LIGHTS.



Suitable for 1915 and later Ford Cars.
Removable lens; fitted with 2 candle-power Tungsten bulb, permits either single or double wiring. Latest type off-and-on switch, easily disconnected. Special bolt fastener for late model Ford Cars.

No. 49-J. Diameter of front, 31/4 inches; diameter of ruby semaphore, 3 inches. All black.

			· · · · · · · · · · · · · · · · · · ·	
Price,	each		608	\$1.00
Price,	each,	dozen	lots503	1.00

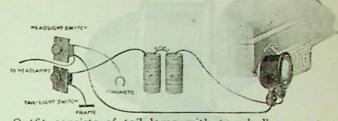
#### SQUARE C GAS HEADLIGHTS.



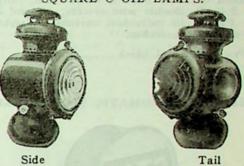
For Ford Cars prior to 1915 and for commercial vehicles; one-piece body of heavy gauge metal; short focus lens mirror; adjustable device for focusing gas tips; removable door glass.

Model 16. All black. Diameter of front door, 9	inches;
extreme height, 10 inches; bracket center, 7 inches.	
Price, per pair550	\$7.50

#### TAIL LIGHT OUTFITS FOR FORD CARS.



#### SQUARE C OIL LAMPS.



With semaphore lens and a durable lining. Made up with special volt to fit Ford 1915 and later cars.

#### REPAIRS FOR SOUARE C FORD HEADLIGHTS.



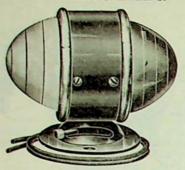
No. 6594X.	Headlight Door, with Glass. Packed one in
carton.	Price, each357 \$0.60
	Lamp Bulb Socket with Focus Screw.
Price,	each206 \$0.30
No. 6585X.	Reflector only. Price, each

#### FONTS FOR OIL LAMPS.



lic	Font Wit	th Burner complete, each	\$0.90
Vo.	. 6599X.	Oil Font Only324	.65
O	. 6460X.	Burner Only	.25

#### K-D PARKING LAMPS.



Body from one-piece heavy gauge steel, two casts. Black enamel baked on; lens frosted, white front, ruby in rear. Bulb, 6-8, 2 C. P., double wire system; off and on switch in lamp. Packed in individual cartons. Weight, 12 ozs. Diameter of lens, 2½ inches.

#### RELIABLE AUTOMATIC STOP SIGNALS.



Prevents rear-end collisions, the most frequent of all traffic accidents. Flashes an instant red warning "Stop" to drivers behind you the moment you press the foot brake.

Furnished complete, individual cartons, with wire, switch, tape, etc.

Price,	each				 	 \$3.00
Price,	each,	in lot	s of	12	 	 3.00

#### SAFE-T-FLASH STOP SIGNALS.



Inexpensive insurance against rear-end collisions; operated by a very slight pressure of the foot upon the brake pedal. Made of one-piece aluminum casting, rust-proof and weather-proof; equipped with 6-8 volt lamp. Furnished in Single and Two-Wire Systems.

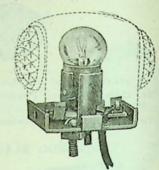
Complete with all necessary attachments.

Price,	each		2753	\$5.00
Price,	each,	in dozen	lots2506	5.00

#### TIFFANY PARKING LAMPS.

Fits flush with the fender. Mounting screws and connections are concealed. Has a readily accessible but concealed switch. To replace the bulb merely snap off the cover leaving the lamp socket fully exposed. Standard two-candle-power 6-8 volt double contact bulbs are used.

Price, each, black..1002 \$1.50 Price, each, nickel.1176 1.95



#### STORM KING LANTERNS.



An efficient, safe, reliable, powerful and economical light, absolutely storm proof and will burn anywhere and in any position. It is very simple in construction and in operation, easy to light and extinguish and can be taken apart in a few seconds if desired. It is equipped with regular Automatic tip cleaner which prevents clogging.

Weight 4½ lbs. filled. Height, 13-in. Capacity one quart of gasoline; burns 15 hours on one filling and produces about 250 candle power. Equipped with rag mantle Mica chimney, pump and lighter. Put up in carton weighing 5 lbs. each.

Price, each, complete	5253	\$6.50
No. 1-A Rag Mantels, per dozen	1356	2.40

#### CONVOY TRUCK LAMPS.





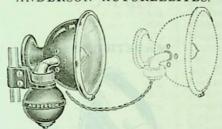


Tail Lamp

Made of cold rolled steel; single shell style side lamps, 8¾ inches high, 7 candle power; non-losable oil font. Fits round or flat bracket. Right and left in pairs.

Tail Lamps, 8¾ inches high, unlosable oil font, 3½-inch ruby lens, 3½-inch door lens, 7 candle power; combination socket fits round or flat bracket.

#### ANDERSON AUTOREELITES.



3 in 1 Lamp.

Spot-Light, Trouble Light, Portable Light.

Construction-Lamp and bracket in beautiful black enamel—nickel trim—fitted with concave lens, backed by a Mazda C (nitrogen) lamp in a silvered parabolic reflector of carefully determined contour to increase and direct the light rays. Switch conveniently located at the back of the lamp; 31/2-inch reducing mirror, giving complete view of

the road behind. 12-foot cord. Clamps—Three pairs of windshield clamps—round, oval and rectangular-included with each lamp-throw away the

two not required.

Model B-6. Dia. 6", 20 C. P., with mirror for rear view. .....\$9.75 Each .....

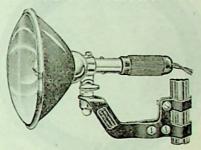
306 P. C.; in lots of 6, 331 P. C.



Diameter of lamp 41/2 inches. One-piece shell reflector, convenient to attach and easy to manipulate in every direction; can be used as a trouble lamp by simply removing the small thumb screw; 6 ft. of cord with each lamp.

Gives a strong white beam of light. ......3501 \$5.00

#### REX SPOTLIGHTS.

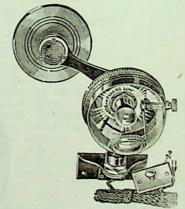


Every part of the Lamp is made of non-rustable metal, no steel being used except in the bracket. The reflector is silver-plated and throws a very powerful beam of light. The light is controlled by the hard rubber switch handle. Combination trouble lamp fixture will appeal to every car

Diameter of Reflector 6". Complete Lamp weighs 2 lbs. Complete with 6 foot of cord packed in carton.

\$6.50 State whether bracket is fo ropen or closed car,

#### BOYCE MOTO-METER LIGHTS AND PARKING LAMPS.



Is so constructed that a strong beam of light is directed on the face of the BOYCE MOTO-METER, which clearly illuminates the instrument while no reflections are possible that would tend to confuse the driver.

This Light may also be converted into a Parking Lamp. By turning the rear disc about one-half an inca you open up six rear red windows which give a red danger signal that can be seen a great distance. An ingenious shutter at the rear renders the red Parking Lamp invisible while driving.

Adjustable to any car, as by the introduction of a special revolving lens it has been found possible to cast a beam of light directly on the face of the BOYCE MOTO-METER. It is particularly interesting to note that only a two-c.p. tail light bulb is required. The fact that only two-c.p. is required has enabled the manufacturers to combine the BOYCE MOTO-METER Light with the Parking Lamp, thereby eliminating the burning of three 'amps while the car is parked.

It is made of brass finished in nickel and black; and includes six feet of weather-proofed wire, one single pole Connecticut type push switch for mounting on dashboard, and three brackets so that it may be mounted on an open car, or on the front or side of closed car.

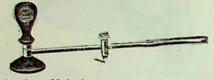
List Price (with mirror), each... \$7.00
List Price (without mirror), each... 6.00
List Price (with ONLY), each... 1.00
25; P. C. Lots of 10, 307 P. C.
In lots of 20, 376 P. C.

#### LAMP FRONT GLASSES.

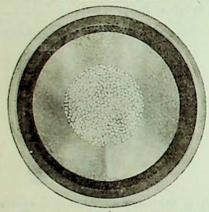
Flat Circles.		Convex C	ircles.
Diam. Inches.	Each.	Diam. Inches.	Each.
8 -inch	.\$0.20	91/4-inch	\$0 25
81/4-inch	20	91/2-inch	
8½-inch	20	101/2-inch	
9 -inch	25	111/s-inch	
All above glass 1/s-inch	thick		

201 and 53 P. C. Dozen lots, assorted, 256 and 58 P. C.

#### CIRCULAR GLASS CUTTERS.



#### T-K BULL'S EYE LENS.

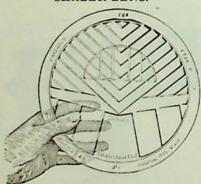


Throws a good driving light on both sides of the road and in front of the car, at a distance from 6 to 40 ft. and a bright white light in the centre of the road, over 300 ft. in front of the car.

Can turn in any position, and will positively not blind a driver of a passing car, because of the uniform design of the lens (see cut above).

There is absolutely no glare to a T-K Bull's Eye Lens. Will pass all state and city ordinances.

#### SHALER LENS.

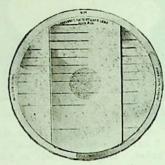


Has received the highest candlepower rating allowed by law in all States where official tests are required under the specifications of the Standard Headlight Law. There can be no better proof of superiority in stopping glare.

Protects user against glaring lights he meets. Each pair in strong corrugated carton to prevent breakage. Ten pairs in case.

814"	and	smaller.	Per	pair.	 	 	 \$2.75
					Lots,		

#### OSGOOD LENS.



One-piece construction and 12-prism efficiency Cravath long distance; stops glare; throws rays one-third mile waist high.

Sizes Sizes	7 83/4	to to	$8\frac{1}{2}$ $9\frac{1}{2}$	inches.	Per pair.       \$2.50         Per pair.       3.00         Per pair.       3.50
Sizes	9%	to	11	inches.	Per pair 4.00

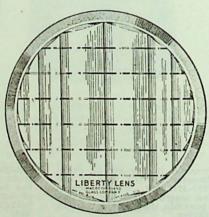
#### MacBETH LENS.



Avoids accidents by its strong ray of pure white light Satisfies the laws of safety and of road courtesy.

Price,	per	pair			3753	\$5.00
Price,	per	pair, in	doz.	pr.	lots3336	5.00

#### LIBERTY LENS.



Standard equipment on America's most famous cars. Legal in all States.

2257	\$3.00 3.00
	2257

### OSGOOD LENS-Sizes Used on the Lamps of the Various M. kes of Automobiles.

Name of Car and Model- Size of Lens		
	Name of Car and Model- Size of Lens	Name of Car and Model- Size of Len-
Abbett Detroit 1017 10 10 01/	Empire All Models 01.	Nach 1017
Abbott-Detroit, 1917-18-19 91/2	Empire, All Models 9½	Nash, 1917 83%
Ace 9½	Essex, 1919-20 83/4	Nash, 1918-19-20-21 83/4
Allen, 1919-20-21 91/4	Essex, 1921-22 85%	
		National, Highway 6 and 12 91/4
Allen, 1922 9	Fiat, All Models 91/2	National, Newport 93/4
American, 1918-19-20-21 9	Ford, 1913-14-15-16-17-18 8	
American, 1922 87/8	Ford, 1919 81/4	National, 1920-21 91/4
	Ford, 1920-21 81/s	
Anderson, 1918 9½		Norwalk, 1919-20-21 85/8
Anderson, 1919 8½	Franklin, 1918 9½	Nelson, 1920 83/k
Anderson, 1920 83/4	Franklin, 1919-20-21 9	Nelson, 1921 9
	G. M. Truck, 1920-21-22 81/8	Oakland, Sensible Six 85/4
Anderson, 1921 9		Oakland, Sensible Six
Anderson, 1922 8½	Gardner, 1921-22 83/4	Oakland, 4210
Apperson, 1918-19-20 8	Grant, 1917-18-19-20-21 8½	Oakland, 38 81/2
Apperson, Model 8, 1921 8	Grant, 1922 9	Oakland, 1918-19 8
	Geronimo, 1920-21 91/2	O-1-1-1 1000 01 00
Apperson, 1921-22 93/8		Oakland, 1920-21-22 81/2
Auburn, 1919-20-21-22 93/8	Handley Knight, 1921-22 81/4	Oldsmobile, 1917-18-19-20-21-22 85/8
Baker 9½	Haynes, 1917-18, 44 9	Oldsmobile, 1922-47 71/8
	Haynes, 1918, 39 91/4	
Beggs, 1919-20-21	11ayres, 1910, 99 974	Overland, 856, T. L 95%
Beggs, 1922 9¾	Haynes, 1919-20-21, "12"	Overland, 1918-19-20 81/8
Bell, 1920-21 9½	Haynes, Models 47, 48, 50, 55, 75 81/s	Overland, 1918-89 93/8
Biddle, 1917-18-19-20	Haynes, 1921, "46-48" 93/s	Overland, 4 Cyl. Sedan, 1919 83/4
Biddle, 1921-22 93/8	H. C. S., 1920-21-22	Overland, 4 Cyl., 1920-21 83/4
Brewster, 1920 93/4	Hollier, 1916-17-18-19 81/4	Overland, 6 Cyl. Sedan, 1919 91/4
Brewster, 1921 93/8	Hollier, 1920-21 81/s	Overland, 1920-21 91/4
	Holmes, All Models 91/4	Overland, 1922
Briscoe, 1918 8	Hadan All M. 11	
Briscoe, 1919-20 83/4	Hudson, All Models 9	Overland, 1918-85-4 and 6 83/4
Briscoe, 1921 83/8	Hupmobile, 1916-17-18 83/4	Owen Magnetic, All Models 91/2
Buick, E50-1919	Hupmobile, 1919-20-21 81/s	Packard, Twin Six10
Buick, H-44, H-45, N-46, N-47 8%	Hupmobile, 1922 83/8	Packard, Single Six
Buick, 1920, K-40 91/4	Int. Harvester Truck, 1920-21 81/2	Patterson, 1917-18-19-20-21-22 81/2
Buick, 1920, K-45 83/4	Int. Harvester Truck, 1922 85%	Peerless 9%
Buick, 1919-20-21 8½	Jackson, 1917-18-19-20 9½	Pierce Arrow, 1917-18-19 91/2
Buick, 1922, 4-cylinder 8	Jackson, 1921 85/8	Pierce Arrow, 1920-21-22 91/s
Buick, 1922, 6-cylinder 81/2	Jordan, 1917-18-19-20-21 91/2	Paige, All Models 93%
	Jordan, 1922 83/4	
Bush, 4-cylinder, 1920-21 9	Jordan, 1922 874	Pan American, 1920 21 93/8
Bush, 6-cylinder, 1920-21 91/2	Kessler, 1921 9	Piedmont, All Models 85%
Cadillac, 1914-15-16-17-18-19 91/4	Kenworthy 9	Pilot, 1920-21
	King 1917-18-19 91/4	Pilot, 1922 8¾
Cadillac, Model 57-1920 91/2		
Cadillac, Model 59-1921 91/s	King, 1920-2183/4	Premier, 1916-17-18-19 93/8
Cadillac, Model 61-1922 91/8	King, 1922 8½	Premier, 1920-21-22 9½
Case, 1919-20-21-22 9½	Kissel, 4-32 8½	Regal, All Models10
Chalmers, 1918 83/8	Kissel, 4-36 9	Reo, 1918-19-20-21-22
Chalmers, 1919 85/8	Kissel, 6-38	ReVere, 1920 21 8
Chalmers, 1920-21-22 83/8	Kissel, 6-42 91/4	Roamer, 1917-18-19-20 91/2
Chandler, 1918-19-20 91/2	Kissell, 6-48, 93/4	Roamer, 1921-22 87/s
Chandler, 1921-22 91/4	Kissel, 1919-20-21-22 8	R. & L. Electric
Chevrolet, 1918-19 (490) 8	Kline, All Models 83/4	R. & V. Knight, Model R-1921 95%
Chevrolet, Baby Grand, 1918-19-20 8%	LaFayette, 1921-22 91/8	R. & V. Knight, Model J-1921 93/8
Chevrolet, Model 490, 1921-22 8	Lexington, 1917 9¾	Saxon, 4 Cylinder 71/2
Chevrolet, 6-cyl., 1919-20-21-22 81/2	Lexington, 1918-19 9½	Saxon, 6 Cylinder 81/2
Cleveland, 1920-21-22 85/8	Lexington, 1920-21	Saxon, 1921 83/4
Cole, 1918 91/4	Lexington, 1922 9	Scripps-Booth, G-4, 1918-19, 4 Cyl. 81/2
Cole, 1919 8	Liberty, 1917-18-19 9½	Scripps-Booth, 1918-19, 6 Cyl 8
Cole, 1920-21 93/8	Liberty, 1920-21-22 9	Scripps-Booth, 1920-21 85/s
0-1, 1000		
Cole, 1922 9½	Lincoln, 1921-22 9	Seneca
Columbia Six, All Models 83/4	Locomobile, 1917-18-19-20 91/2	Sheridan, 1921 85%
Comet10	Locomobile, 1921-22 93/4	
	,	Singer, 1916-17-18-19
Commonwealth All Models 198	Madison 01/ 1	Singer 1920-21 93/k
Commonwealth, All Models 8%	Madison 9½	Singer, 1920-21 91/2
Crawford, 1920-21-22 9	McFarlan, 1916-17-18-19 91/2	Singer, 1920-21. 9½ Singer, 1922. 10¾
Crawford, 1920-21-22 9	McFarlan, 1916-17-18-19 9½ McFarlan, 1920-21 10¼	Singer, 1920-21     9½       Singer, 1922     10¾       Standard 8     87%
Crawford, 1920-21-22	McFarlan, 1916-17-18-19 9½ McFarlan, 1920-21 10¼	Singer, 1920-21     9½       Singer, 1922     10¾       Standard 8     87%
Crawford, 1920-21-22	McFarlan, 1916-17-18-19 9½ McFarlan, 1920-21 10¼ Maibohm, 1921-22 8¾	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87/s         Stanley, All Models       9¾
Crawford, 1920-21-22	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87s         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½
Crawford, 1920-21-22	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87s         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼
Crawford, 1920-21-22	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87s         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼
Crawford, 1920-21-22.     9       Crow-Elkhart, 1916-17-18-19-20.     8½       Crow-Elkhart, 1921-22.     8¾       Cunningham, 1916-17-18-19.     10       Cunningham, 1920-21.     11       Curtis, 1920-21.     8½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾	Singer, 1920-21     9½       Singer, 1922     10¾       Standard 8     87%       Stanley, All Models     9¾       Stearns-Knight, 1916-17-18-19     9½       Sterns-Knight, 1920-21-22     9¼       Stephens, All Models     9¾
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½	McFarlan, 1916-17-18-19     9½       McFarlan, 1920-21     10¼       Maibohm, 1921-22     8¾       Marmon, All Models     9%       Maxwell, Series 17     8½       Maxwell, 1919-20-21-22     8¾       Mercer, 1916-17-18-19     9%	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87%         Stauley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9¾         Stevens-Duryea, 1920-21       8½
Crawford, 1920-21-22.     9       Crow-Elkhart, 1916-17-18-19-20.     8½       Crow-Elkhart, 1921-22.     8¾       Cunningham, 1916-17-18-19.     10       Cunningham, 1920-21.     11       Curtis, 1920-21.     8½	McFarlan, 1916-17-18-19     9½       McFarlan, 1920-21     10½       Maibohm, 1921-22     8¾       Marmon, All Models     9½       Maxwell, Series 17     8½       Maxwell, 1919-20-21-22     8¾       Mercer, 1916-17-18-19     9½       Mercer, 1920     9	Singer, 1920-21     9½       Singer, 1922     10¾       Standard 8     87%       Stanley, All Models     9¾       Stearns-Knight, 1916-17-18-19     9½       Sterns-Knight, 1920-21-22     9¼       Stephens, All Models     9¾
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9	McFarlan, 1916-17-18-19     9½       McFarlan, 1920-21     10½       Maibohm, 1921-22     8¾       Marmon, All Models     9½       Maxwell, Series 17     8½       Maxwell, 1919-20-21-22     8¾       Mercer, 1916-17-18-19     9½       Mercer, 1920     9	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87k         Stauley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½	McFarlan, 1916-17-18-19     9½       McFarlan, 1920-21     10¼       Maibohm, 1921-22     8¾       Marmon, All Models     9½       Maxwell, Series 17     8½       Maxwell, 1919-20-21-22     8¾       Mercer, 1916-17-18-19     9½       Mercer, 1920     9       Mercer, 1921     9½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       8½         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾	McFarlan, 1916-17-18-19     9½       McFarlan, 1920-21     10¼       Maibohm, 1921-22     8¾       Marmon, All Models     9½       Maxwell, Series 17     8½       Maxwell, 1919-20-21-22     8¾       Mercer, 1916-17-18-19     9%       Mercer, 1920     9       Mercer, 1921     9½       Metz, 1916-17-18-19     8½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       8½         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       85%	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9%         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       8%         Stanley, All Models       9%         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       95%         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       85%	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Metz, 1910-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87%         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9½         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Metz, 1910-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87%         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9½         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9½         Metz, 1910-17-18-19       8½         Metz, 1920-21       9½         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87%         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22         Studebaker, Little Six, 1920-21-22       8½         Studebaker, Little Six, 1920-21-22       8½
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       8½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½	Singer, 1920-21
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8½         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       87%         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9¼         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22         Studebaker, Little Six, 1920-21-22       8½         Studebaker, Little Six, 1920-21-22       8½
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       8½         Dort, 17, 1921-22.       9	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8½         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8½	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       8½         Stauley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9½         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22       9½         Studebaker, Little Six, 1920-21-22       8½         Stutz, 1917-18-19-20-21       9½         Stutz, Bear Cat       9½
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       8½         Dort, 17, 1921-22.       9         Dorris, 1920-21.       9¼	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8½         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8½         Mitchell, 1921-22       8	Singer, 1920-21       9½         Singer, 1922       10¾         Standard 8       8%         Stanley, All Models       9¾         Stearns-Knight, 1916-17-18-19       9½         Sterns-Knight, 1920-21-22       9½         Stephens, All Models       9½         Stevens-Duryea, 1920-21       8½         Stevens-Duryea, 1922       9         Stewart, All Models       8½         Studebaker, Other Models       9         Studebaker, Big 6 and Special 6       1920-21-22       9½         Studebaker, Little Six, 1920-21-22       8½         Stutz, 1917-18-19-20-21       9%         Stutz, Bear Cat       9½         Templar, 1920-21       9%
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       8½         Dort, 17, 1921-22.       9         Dorris, 1920-21.       9¼         Dorris, 1922.       9½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, F-1920       8%         Mitchell, 1921-22       8         Moline Knight, 1918-19-20       9½	Singer, 1920-21
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Dupont. 1922.       9½	McFarlan,         1916-17-18-19         9½           McFarlan,         1920-21         10¼           Maibohm,         1921-22         8¾           Marmon,         All Models         9½           Maxwell,         Series         17         8½           Maxwell,         1919-20-21-22         8¾           Mercer,         1916-17-18-19         9½           Mercer,         1920         9           Mercer,         1921         9½           Metz,         1916-17-18-19         8½           Metz,         1920-21         9½           Miburn,         1917-18-19-20         6¼           Milburn,         1921-1         6¾           Mitchell,         C-442         8½           Mitchell,         E-1920         8¾           Mitchell,         1921-22         8           Moline Knight,         1918-19-20         9½           Moline Knight,         1921-22         9¼	Singer, 1920-21
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Dupont. 1922.       9½	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10¼           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9¼           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, F-1920         8%           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9	Singer, 1920-21
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9¼         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10¼           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9¼           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, F-1920         8%           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9	Singer, 1920-21
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9¼         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elcar, All Models.       9½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8¾         Mitchell, 1921-22       8         Moline Knight, 1918-19-20       9½         Moline Knight, 1921-22       9¼         Monitor, 1920-21       9         Monroe, M-3       7¾	Singer, 1920-21. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterns-Knight, 1920-21-22. Stephens, All Models. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Studebaker, Little Six, 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, Bear Cat. Templar, 1920-21. Texan, 1921. Sty Tulsa, 1921. Velie, 1919-20-21-22. Vim. 1920-21. Six
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9¼         Dorris, 1920-21.       9¼         Dupont. 1922.       9½         Earl, 1922.       8¾         Elcar, All Models.       9½         Elcar, 1921.       9¼	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8¾         Mitchell, E-1920       8¾         Moline Knight, 1918-19-20       9½         Moline Knight, 1918-19-20       9½         Moline Knight, 1921-22       9¼         Monroe, M-3       7¾         Monroe, 1920       8%	Singer, 1920-21. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterrns-Knight, 1920-21-22. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, 1917-18-19-20-21. Templar, 1920-21. Templar, 1920-21. Sty Tulsa, 1921. Sty Velie, 1919-20-21-22. Vim. 1920-21. Sty Washington, 1921. Sty Washington, 1921. Sty Washington, 1921. Sty
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9¼         Dorris, 1920-21.       9¼         Dupont. 1922.       9½         Earl, 1922.       8¾         Elcar, All Models.       9½         Elcar, 1921.       9¼	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8¾         Mitchell, 1921-22       8         Moline Knight, 1918-19-20       9½         Moline Knight, 1921-22       9¼         Monitor, 1920-21       9         Monroe, M-3       7¾	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterns-Knight, 1920-21-22. Stephens, All Models. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, 1921-18-19-20-21. Templar, 1920-21. Stutz, 1919-20-21-22. Vim. 1920-21. Vim. 1920-21. Vim. 1920-21. Washington, 1921. Siy Westcott, 1919-20-21-22. 91/4
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       85%         Dodge, All Models.       8½         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9½         Dupont. 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elcar, All Models.       9½         Elcar, 1921.       9¼         Elgin, 1917-18-19.       9½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10½         Maibohm, 1921-22       8½         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9½         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8½         Mitchell, B-1920       8½         Moline Knight, 1918-19-20       9½         Moline Knight, 1921-22       9½         Monitor, 1920-21       9         Monroe, M-3       7¾         Monroe, 1920       8%         Monroe, 1921-22       8¾	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterns-Knight, 1920-21-22. Stephens, All Models. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, 1921-18-19-20-21. Templar, 1920-21. Stutz, 1919-20-21-22. Vim. 1920-21. Vim. 1920-21. Vim. 1920-21. Washington, 1921. Siy Westcott, 1919-20-21-22. 91/4
Crawford, 1920-21-22. 9 Crow-Elkhart, 1916-17-18-19-20. 8½ Crow-Elkhart, 1921-22. 8¾ Cunningham, 1916-17-18-19. 10 Cunningham, 1920-21. 11 Curtis, 1920-21. 8½ Daniels, Old Models. 9½ Daniels, 1921-22. 9 Davis, All Models. 8½ Dixie Flyer, 1920. 8¾ Dixie Flyer, 1921-22. 8½ Dodge, All Models. 8¾ Dort, 1918-19. 8½ Dort, 17-A, 1921-22. 8½ Dort, 17, 1921-22. 9 Dorris, 1920-21. 9¼ Dorris, 1920-21. 9¼ Dorris, 1920-21. 9½ Elgar, All Models. 9½ Elcar, All Models. 9½ Elgin, 1917-18-19. 9½	McFarlan, 1916-17-18-19       9½         McFarlan, 1920-21       10¼         Maibohm, 1921-22       8¾         Marmon, All Models       9½         Maxwell, Series 17       8½         Maxwell, 1919-20-21-22       8¾         Mercer, 1916-17-18-19       9½         Mercer, 1920       9         Mercer, 1921       9½         Metz, 1916-17-18-19       8½         Metz, 1920-21       9¼         Milburn, 1917-18-19-20       6¼         Milburn, 1921       6¾         Mitchell, C-442       8½         Mitchell, E-1920       8½         Mitchell, 1921-22       8         Moline Knight, 1918-19-20       9½         Moline Knight, 1921-22       9¼         Montor, 1920-21       9         Monroe, M-3       7¾         Monroe, 1921-2       8¾         Monroe, 1921-22       8¾         Monroe, 1918-6°       8½	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterrns-Knight, 1920-21-22. Stephens, All Models. Stevens-Duryea, 1920-21. Stevens-Dur
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elear, All Models.       9½         Elear, 1921.       9¼         Elgin, 1917-18-19.       9½         Elgin, H-1920.       9¼         Elgin, K-1920.       9½	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10¼           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9½           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, E-1920         8½           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9           Monroe, 1920         8%           Monroe, 1921-22         8%           Monroe, 1918-"6"         8½           Moon, 1919         9¼	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterns-Knight, 1920-21-22. Sterns-Knight, 1920-21-22. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, Bear Cat. Templar, 1920-21. Texan, 1921. Sty Tulsa, 1921. Sty Velie, 1919-20-21-22. Vim. 1920-21. Washington, 1921. Washington, 1921. Washington, 1921. Willys-Knight, 1917-18-19-20-22. Willys-Knight, 1917-18-19-20-22. Willys-Knight, 1917-18-19-20-22.
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elear, All Models.       9½         Elear, 1921.       9¼         Elgin, 1917-18-19.       9½         Elgin, H-1920.       9¼         Elgin, K-1920.       9½	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10½           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9½           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, E-1920         8½           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9           Monroe, 1920         8%           Monroe, 1921-22         8%           Monroe, 1918-"6"         8½           Moon, 1919         9¼           Moon, 1920-21-22         8½	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterrns-Knight, 1920-21-22. Sterphens, All Models. Stevens-Duryea, 1920-21. Stevens-Du
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elcar, All Models.       9½         Elgin, 1917-18-19.       9½         Elgin, H-1920.       9¼         Elgin, K-1920.       9½         Elgin, 1921.       9¼         Elgin, 1921.       9¼	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10½           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9½           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, E-1920         8½           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9           Monroe, 1920         8%           Monroe, 1921-22         8%           Monroe, 1918-"6"         8½           Moon, 1919         9¼           Moon, 1920-21-22         8½	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterrns-Knight, 1920-21-22. Sterphens, All Models. Stevens-Duryea, 1920-21. Stevens-Du
Crawford, 1920-21-22.       9         Crow-Elkhart, 1916-17-18-19-20.       8½         Crow-Elkhart, 1921-22.       8¾         Cunningham, 1916-17-18-19.       10         Cunningham, 1920-21.       11         Curtis, 1920-21.       8½         Daniels, Old Models.       9½         Daniels, 1921-22.       9         Davis, All Models.       8½         Dixie Flyer, 1920.       8¾         Dixie Flyer, 1921-22.       8½         Dodge, All Models.       8¾         Dort, 1918-19.       8½         Dort, 17-A, 1921-22.       9         Dorris, 1920-21.       9½         Dorris, 1922.       9½         Dupont. 1922.       9½         Earl, 1922.       8¾         Elear, All Models.       9½         Elear, 1921.       9¼         Elgin, 1917-18-19.       9½         Elgin, H-1920.       9¼         Elgin, K-1920.       9½	McFarlan, 1916-17-18-19         9½           McFarlan, 1920-21         10¼           Maibohm, 1921-22         8¾           Marmon, All Models         9½           Maxwell, Series 17         8½           Maxwell, 1919-20-21-22         8¾           Mercer, 1916-17-18-19         9%           Mercer, 1920         9           Mercer, 1921         9½           Metz, 1916-17-18-19         8½           Metz, 1920-21         9½           Milburn, 1917-18-19-20         6¼           Milburn, 1921         6¾           Mitchell, C-442         8½           Mitchell, E-1920         8½           Mitchell, 1921-22         8           Moline Knight, 1918-19-20         9½           Moline Knight, 1921-22         9¼           Monitor, 1920-21         9           Monroe, 1920         8%           Monroe, 1921-22         8%           Monroe, 1918-"6"         8½           Moon, 1919         9¼	Singer, 1920-21. Singer, 1922. Singer, 1922. Singer, 1922. Standard 8. Standard 8. Stanley, All Models. Stearns-Knight, 1916-17-18-19. Sterns-Knight, 1920-21-22. Sterns-Knight, 1920-21-22. Stevens-Duryea, 1920-21. Stevens-Duryea, 1920-21. Stevens-Duryea, 1922. Stewart, All Models. Studebaker, Other Models. Studebaker, Other Models. Studebaker, Big 6 and Special 6. 1920-21-22. Studebaker, Little Six, 1920-21-22. Stutz, 1917-18-19-20-21. Stutz, Bear Cat. Templar, 1920-21. Texan, 1921. Sty Tulsa, 1921. Sty Velie, 1919-20-21-22. Vim. 1920-21. Washington, 1921. Washington, 1921. Washington, 1921. Willys-Knight, 1917-18-19-20-22. Willys-Knight, 1917-18-19-20-22. Willys-Knight, 1917-18-19-20-22.



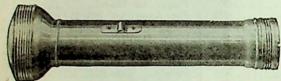
#### Miners' Tubular Vulc Fibre.

Size, 11/2x61/2 inches. 2 Cell.	
No. 52616. Case and Lamp only.	Price, each \$1.65
No. 5790. Renewal Battery.	Price, each35
No. 51198. Renewal Bulb.	Price, each18
Size, 11/2x81/2 inches. 3 Cell.	
No. 52619. Case and Lamp only.	Price, each \$1.75
No. 5705. Renewal Battery.	Price, each
No. 51193. Renewal Bulb.	Price, each



#### Standard Tubular Vulc Fibre.

Size, 11/22	61/2 inches. 2 Cell.	
	Case and Lamp only.	Price, each \$1.35
No. 5790.	Renewal Battery.	Price, each
No. 51198.	Renewal Bulb.	Price, each18
Size, 11/22	8½ inches. 3 Cell.	12 0000
No. 52612.	Case and Lamp only.	Price, each\$1.50
No. 5705.	Renewal Battery.	Price, each50
No. 51193.	Renewal Bulb.	Price, each18



Miners' Tubular, Nickel.

Size, 11/2x6	inches. 2 Cell.	
No. 102616.	Case and Lamp only.	Price, each\$2.00
No. 5790.	Renewal Battery.	Price, each
No. 51198.	Renewal Bulb.	Price, each18
Size, 11/2x8	3½ inches. 3 Cell.	
No. 102619.	Case and Lamp only.	Price, each \$2.25
No. 5705.	Renewal Battery.	Price, each50
No. 51193.	Renewal Bulb.	Price, each18

#### SPOTLIGHT TYPE.



Siz	ze, 11/21	191/4 inches. 3 Cell, Fi	bre.
No.	52672.	Lamp and Case only.	Price, each\$2.85
No.	5705.	Renewal Battery.	Price, each50
No.	1162.	Renewal Bulb.	Price, each



Size, 1/2x9/4 inches. 3 Cell, Nic.	kel.
No. 102672. Lamp and Case only.	Price, each \$3.25
No. 5705. Renewal Battery.	Price, each50
No. 1162. Renewal Bulb.	Price, each 25
Each spotlight is equipped with	one extra concentrated
filament, Mazda lamp in bottom ca	ap container.

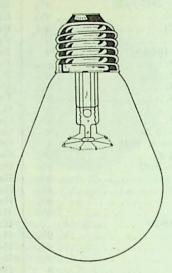
#### AMERICAN UNIT CELLS.

	ells, 1; size, ells, 1; size,		each\$	
	Not	e.		

Unit Cells No. 5950, equivalent of 1 5790 Battery.
 Unit Cells No. 5950, equivalent of 1 5705 Battery.
 Unit Cells No. 5935, equivalent of 1 5791 Battery.

Flashlights and Batteries, 406 P. C. \$25.00 or more, 401 and 53 P. C. Renewal Bulbs, less than tem List; Unit Pkg. 10, 245 P. C.

MAZDA B. MILL TYPE LAMPS.



The Edison Mazda Milltype Lamp is just the thing to 

#### CARBON LAMPS.



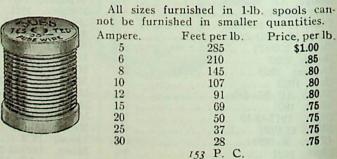
Size of Lamp in Watts	Effi- ciency W.P.	Type and Size Bulb		Max. Over all Length, Inches	Screw Base Regularly Supplied	Std. Pkg. Qty.	1000	Price Frosted
The state of			110	-125 VO	LTS		o witte	IRVING A
30 50 & 60 120	3.23 2.97 2.97	S-17 S-19 S-24	21/s 23/s 3	4½ 5½ 5¾ 5¾	Medium Medium Medium	200 200 100	\$0.22 .22 .30	\$0.25 .25 .35

List Net. Standard Pkgs. 103 P. C.

#### FUSE WIRE.

Price, per lb.

\$1.00 .85 .80 .80 .80 .75 .75



# MAZDA B. LAMPS FOR STANDARD LIGHTING SERVICE.

110, 115 and 120 VOLTS.





These lamps are fitted with medium screw base.

#### MAZDA B LAMPS.

Watts.	Bulb.	Lumens.	Pkg. Qty.	List Price.
10	S-17 Clear	80	120	\$0.35
15	S-17 Clear	130	120	.35
25	S-17 Clear	240	120	.35
40	S-19 Clear	400	120	.35
50	S-19 Clear	500	120	.35
60	S-21 Clear	620	120.	.40

#### MAZDA B MILL TYPE LAMPS.

These lamps are of special construction to give the ruggedness that will insure satisfactory service under unusual conditions of vibration or repeated mechanical shocks.

conditions	of vibration or	repeated	mechanical	SHOCKS.
.25	P-19 Clear	200	120	\$0.40
50	P-19 Clear	420	120.	.40
	220, 230, 240	AND 250	VOLTS.	

#### MAZDA B LAMPS.

25	S-19 Clear	200	120	\$0.40
40	S-19 Clear	350	120	.40
50	S-19 Clear	450	120	.40
60	S-21 Clear	560	60	.50
100	S-30 Clear	1050	24	1.15

# SPECIAL LIGHTING SERVICE COUNTRY HOME PLANT

28-32 VOLTS.

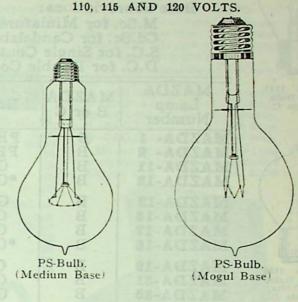




#### MAZDA B LAMPS.

	Milibrit D Division (								
Watts.	Bulb.	Screw Base.	Pkg. Qty.	List Price.					
5	S-14 Clear	Medium	200	\$0.35					
10	S-17 Clear	Medium	120	.35					
15	S-17 Clear	Medium	120	.35					
20	S-17 Clear	Medium	120	.35					
20	G-18½ Clear	Medium	60	.50					
25	S-17 Clear	Medium	120	.35					
40	S-19 Clear	Medium	120	.35					

## GENERAL LIGHTING SERVICE



#### MAZDA C LAMPS.

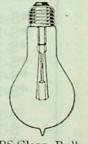
Watts.	Bulb.	Lumens.	Pkg. Qty.	List Price.
50	PS-20 Clear	500	60	\$0.55
75	PS-22 Clear	880	60	.70
100	PS-25 Clear	1300	24	.95
150	PS-25 Clear	2100	24	1.30
200	PS-30 Clear	3000	24	1.80
300	PS-35 Clear	4900	24	2.50
400	PS-40 Clear	7000	12	3.50
500	PS-40 Clear	9000	12	3.75
750	PS-52 Clear	14000	8	5.25
1000	PS-52 Clear	20000		6.00

If the lamps listed above are for use in other than tip down position, orders should so state.

## SPECIAL LIGHTING SERVICE COUNTRY HOME PLANT

28-32 VOLT.

MAZDA C LAMPS.







PS-Clear Bulb

White PS-16 Bulb.

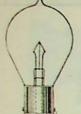
White PS-20 Bulb

Watts.	Bulb.	Screw Base.	Pkg. Qty.	Price.
15	*PS-16 White	Medium	120	\$0.60
25	*PS-16 White	Medium	120	.60
50	PS-20 White	Medium	60	.60
50	PS-20 Clear	Medium	60	.60
75	PS-22 Clear	Medium	60	.75
100	PS-25 Clear	Medium	24	1.05

<sup>\*</sup>White coated tipped bulb.

List Net. Standard Pkgs., 103 P. C.

# PRICES OF MINIATURE MAZDA LAMPS



Mazda 1141, S-11 Bulb, Mazda C.

Mazda 1139 S-11 Bulb, 6-8 Volts, Mazda C.

Mazda 1160 S-11 Bulb, 9 Volt, Mazda C.

Mazda 1158, S-11 Bulb, 6-8 Volts, Mazda C

Effective May 1, 1922 Lamps not starred are listed in the Standard Schedules. Base abbreviations:

M.Sc. for Miniature Screw Base.

Cd.Sc. for Candelabra Screw Base.
S.C. for Single Contact Bayonet Candelabra Base.
D.C. for Double Contact Bayonet Candelabra Base.

D.C. for Double Contact Bayonet Candelabra Base.									1.	
	MAZDA Lamp Number	MAZDA B or C	Bulb	Base	Volts		C-P.	Wans	Qty.	List Price
	MAZDA- 1 MAZDA- 2 MAZDA-11 MAZDA-12	B B B	FE-3 1/2 FE-3 1/2 G-3 1/2 *G-3 1/2	M.Sc. M.Sc. M.Sc. M.Sc.	2.2 3.3 2.3 3.5	0.25 0.25 0.27 0.27			10 10 10 10	\$0.18 .18 .18 .18
	MAZDA-18 MAZDA-16 MAZDA-17 MAZDA-18	B B B	G-31/4 G-41/4 G-41/4 *G-41/4	M.Sc. M.Sc. M.Sc.	3.8 2.5 3.8 4.0	0.30 0.30 0.30 0.30			10 10 10 10	.25 .18 .18
	MAZDA-19 MAZDA-31 MAZDA-85	B B B	G-4½ G-5½ G-5½	M.Sc. M.Sc. M.Sc.	1.25 6.2 2.4	0.60 0.30 0.80			10 10 10	.18 .18 18
	MAZDA-61 MAZDA-62 MAZDA-63 MAZDA-64	B B B	G-6 G-6 G-6 G-6	S.C. D.C. S.C. D.C.	3-4 3-4 6-8 6-8		2 2 2 2	1.40	10 10 10 10	.25 .25 .25 .25
	MAZDA-67 MAZDA-68 MAZDA-71 MAZDA-78	B B B	G-6 G-6 *G-6 *G-6	S.C. D.C. S.C. D.C.	12-16 12-16 18-24 18-24		2 2 2 2		10 10 10 10	.25 .25 .35
	MAZDA-81 MAZDA-82 MAZDA-87 MAZDA-88	B B C C	G-8 G-8 *G-8 *G-8	S.C. D.C. S.C. D.C.	6-8 6-8 6-8 6-8		4 4 12 12		10 10 10 10	.30 .30 .50
	MAZDA-89 MAZDA-90 MAZDA-110	B B B	*G-8 *G-8 *G-10	S.C. D.C. D.C.	12-16 12-16 40-44		4	8	10 10 10	.30 .30 .75
	MAZDA-1126 MAZDA-1126 MAZDA-1129 MAZDA-1130	B	*S-11 *S-11 S-11 S-11	S.C. D.C. S.C. D.C.	6-8 6-8 6-8 6-8	 	15 15 21 21	1900 1900 1	10 10 10 10	.40 .40 .40 .40
	MAZDA-1133 MAZDA-1134 MAZDA-1136 MAZDA-1138 MAZDA-1139 MAZDA-1140	C B C B	*S-11 *S-11 *S-11 *S-11 *S-11	S.C. D.C. D.C. D.C. S.C. D.C.	6-8 6-8 9 9 12-16 12-16		32 32 18 27 15 15		10 10 10 10 10 10	60 .60 .45 .45 .45
	MAZDA-1141 MAZDA-1142 MAZDA-1143 MAZDA-1144	C	S-11 S-11 *S-11 *S-11	S.C. D.C. S.C. D.C.	12-16 12-16 12-16 12-16		21 21 32 32		10 10 10 10	.45 .45 .70 .70
	MAZDA-1145 MAZDA-1146 MAZDA-1150	C	*S-11 *S-11 *S-11	S.C. D.C. D.C.	18-24 18-24 40-44		27 27	15	10 10 10	.70 .70 .75
	MAZDA-1158	С	S-11	D.C.	6-8 -		${21 \choose 3}$		10	.45
	MAZDA-1160	C	S-11	D.C.	9	l	21		10	.40

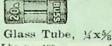


\* These lamps are listed in the Intermediate Schedules and are not regularly Less than 1 Unit Package List. 1 Unit Pkg. 10 Lamps or less than 100, 25; P. C. 100 or more Lamps Unit Pkgs., 536 P. C. carried in stock.

#### "BUSS" AUTO FUSES

BUSS auto fuses are approved by the Underwriter's Laboratories. Inc., in all sizes recognized by the S. A. E. (3AG 5, 10, 15, and 20 amp. and 5AG 30 amp.)

Carton quantity, all types, 10. Standard package, 100. Always order in quantities of 10 or multiples thereof, not 12, 25, 36, etc.



No.	1AG, G	lass Tube, ¼	x5/8 in.
Amp	No. Lb	s. per 100	Each
5	1AG5	0.43	\$0.05
10		0.43	.05
15	1AG15	0.43	.05
20	1AG20	0.43	.05
30	1AG30	0.43	.05
	1		3
	PRODUCTION OF THE PERSON OF TH		-

		ass Tube, 1/4	
Amp	No. Li	os per 100	Each
5		0.55	
10		0.55	.05
15	3AG15	0.55	.05
20	3AG20	0.55	.05
30	3AG30	0.55	.05
	-		-

4AG, Gla	ass Tube, 9/32	11/4 in.
No. Lb	s. per 100	Each
4AG5	0.8	\$0.10
		.10
4AG15	0.8	.10
4AG20	0.8	.10
4A.G30	0.8	.10
	4AG, Gla No. La 4AG5 4AG10 4AG15 4AG20	AAG, Glass Tube, 9/322 No. Lbs. per 100 4AG5 0.8 4AG10 0.8 4AG15 0.8 4AG20 0.8



No.	5AG	Gla	ss Tu	be,1	3/323	11/2	in.
			s. per	100			ach
5	5A(		1.5			\$0.	.10
10	5A(	<b>310</b>	1.5				.10
15	5A(	315	1.5				.10
20	5A(	320	1.5				.10
30	5A(	330	1.5				10
No.	6AG	, G1	ass T	ube	9/1	6x2 i	in.
Amp	No.	Lb	s. per	100		Es	ch
5	6A(	35	3.6			\$6.	20
10	6A(	310	3.6				20
15	6A(	115	3.6				20
20	6A(	120	3.6				20
30	6A(	130	3.6			G 99.	20
	-				1		
	0	1		308	B		
	0	1	lan C		0		
No.	Am	p.	Car			Ea	ch
15A	5	Vel	ie			\$0.	18
17A	25	Mit	chell	16.	Holl	ier.	
			ris '1				
			ourn			18,	
			ol- 11				10

Auburn Buick '14

Weight 1.5 lbs. per 100.

.18

Cartons used in assortments are the same as those in which BUSS auto fuses are regularly packed.

Therefore, when additional fuses are required to replace those sold, they will be furnished in identical cartons, and the case can always be kept filled and in good shape.

#### ASSORTMENT CASES

Each case carries a list of cars, showing proper fuse to use, illustrations of all types of fuses, and a card showing list prices.

No. 100 Assortment contains 100 fuses, 10 sizes 10 - 1AG 20 amp. 10 - 4AG 10 amp. 10 - 3AG 5 amp. 10 - 4AG 20 amp. 10 - 3AG 10 amp. 10 - 5AG 10 amp.

10 - 3AG 15 amp. 10 - 5AG 20 amp. 10-3AG 20 amp. 10-5AG 30 amp.

284 out of 326 types of cars can be equipped from this assortment Weight 1 lb. List Price, \$7.50



No. 200 Assortment contains 200 fuses, 12 sizes. 16-1AG 10 amp. 10-4AG 10 amp. 40 - 1AG 20 amp. 10 - 4AG 20 amp. 10 - 3AG 5 amp. 10 - 5AG 10 amp. 20 - 3AG 10 amp. 10 - 5AG 20 amp. 20 - 3AG 15 amp. 10 - 5AG 30 amp.

40-3AG 20 amp. 10-6AG 20 amp. 317 out of 326 types of cars can be equipped from this assortment Weightil lbs. List Price \$14.00

Akron.	3AG 5-10	Corbitt 5AG	20	1000 T TOT	OF CARC		Parker 5AG 15	Sterling/3AG	5
Allen '14-'17			15	1944 LIST	OF CARS		Pathfinder 5AG 5-15	15AG	30
Allen '18-'20			30				Peerless 12-14 3AG 20	Stevens Durvea E. 5AG	15
Allen '20-'21		Crawford '21-'22. [5AG	15	Showing Prop	er Fuse to Use		Peerlese 5K IAG 10		
		Crawlord 21- 22. SAG	5	Holmes '18-'22 3AG 15	M 112 112 1210			Stewart 3AG	15
			9			10	Peerless '15-'19[6AG 30	Studebaker '14 4AG	10
American '17-'21		Crow-Elkhart		Hupmobile HA 5AG 5-15		30	11AG 10	Studebaker 15-22 3AG	10
Anderson 18-19			10	Hupmobile K 4AG 5		30	Peerless '20-'22 1AG 10	Stutz '15-'18 3AG	25
Apex C. D.	1AG 20		20	Hupmobile N 4AG 10	Mercer '19-'22 15AG	30	Pierce Arrow	Stutz'19-'20 3AG	10
Apex E	3AG 20		15	R-Bijur 3AG 10	13AG	5	'13-'21 5AG 5-10-30	Sun 3AG	20
Apperson '15-'18.	3AG 20	Daniels '15-'19 5AG 5-	-15	\1AG 10	Metz'14-'16 1AG	20	Pilot '15 3AG 15	Templar '18-'22 . 3AG :	5-20
Apperson '19-'21	1AG 10		20	R-Westgh 3AG 5-10	Metz '17-'18 5AG 5-	-30	Pilot '21-'22 3AG 20	Transport 3AG	20
Arbens			15	Indiana		20	Pope Hartford. 4AG 10	Triangle 3AG	-20
Armleder.			20	15AG 5	13AG	5	Pratt IAG 20	Tulsa 18-21 3AG	15
	5AG 30		15	International 3AG 10		15	Premier '15 3AG 10	U.S. JIAG	5
Auburn '15-'16			10	Jackson 1AG 20					
				Jeffrey '13-'14 5AG 15		25	Premier '16 4AG 10	The JAAG	15
	5AG 15		20			20	R. & V 6AG 20	Ultimate	5
Beggs '19-'21	1AG 10		10	Jeffrey 15 4AG 10		20	Reml [5AG 5	13AG	10
Bessemer	3AG 20		10	Jeffrey '16-'17 3AG 20	Mitchell 19-22 3AG	10	[1AG 20	Velie 15 IAG	20
Bethlebem	3AG 5		15	Jones IAG 20	Moline Knight		Reo '20-'21 4AG 5	Velic 16-21 15A	5
	5AG 20		10	Jordan '17-'19 3AG 20		10	Revere '18-'21. 5AG 15	Vim	10
Biddle '15-'20	5AG 10	Dort '16-'17 \$1AG	10	M-MX closed_ 3AG 10	MK40C 1AG	15	Roamer '17-'18 3AG 20	Vogue 5AG	15
Birch 30	5AG 50	15AG	5	King '16-'17 4AG 10	'16-'20 6AG	20	Roamer 19 3AG 10	Washington IAG	10
	3AG 20	Dort '18-'22] 1AG	10	King '18-'19 3AG 10		20		Westcott '16 4AG	15
Birch 40, 45		13AG	5	King '20 /3AG 10		10	Roamer '20 1AG 20	White '14. 5AG	15
Bour Davis			25	14AG 25		5	Roamer E4-75 5AG 15	White 15-16. 4AG	15
Brewster.	240 5 10		20	Kissell '15 4AG 15		30	Roamer E6-51 3AG 10	White '17-'18 1AG	10
Drewster	5AG 30	Flear '16-19 3AG	15	Kissell '16-'22 3AG 20		15	Sandow [1AG 5	Willys Knight	10
			20	Kline Kar '16-'22.5AG5-10-15			[5AG 5	(112)	-
Briscoe B15,8-38			20			20	Saron '16 5AG 15	\$20 3AG	20
All Others		13AG	5	Larabee X2		10	Saxon '17-'21 3AG 15	All Others IAG	28
Case O. R. S			20	15AG 30		5	Scrippe-Booth	Wintber(3AG	5
Case T.	1AG 20		20	Lexington 15-16. 5AG 5-15		15	B39, 40, 41, 42, 3AG 20	154G10	0.30
Case U.	3AG 5-15		20	Lexington '17-'21. [5AG 5-15	Nelson	5		Winton 20 IAG	20
Case V.	3AG 5		15	(3AG 5			Seneca '19 [3AG 20	Winton 21 5AG10	-13
Chalmers 24	6AG 15	Franklin '14-'16 3AG	15	Liberty	Netes. 3AG 5-3	20	5AC 50	Winton 21A 3AG	10
26,29,648,654	6AG 20	Franklin '17-'22 3AG	10	closed car 3AG 5	Oakland '15 4AG 1	15	Seneca '20 /1AG 20	Winton '16-'20 3AG	20
	IAG 15	Gardner 3AG 5-1	20	Locomobile 14 6AG 30	Oakland '16-'22		\\ 5AG 50		
	3AG 15	Glide 5AG	15	'15-'22 5AG 10	closed car 3AG		Service 5AG 10	STARTING AND	
	5AG 30		30	Maibohm 1AG 10	Olympian 1AG 2	20	Simplex '15-'16(6AG 30	LTG. SYSTEMS	
	5AO 5-15		30	Marmon 41, 48, 4AG 20	Oncida 3AG 5-1		5AG 10	Gray & Davis	
	6AG 15		30	(3AG 5	Overland	10	Simplex '17 /6AG 20	Ford '15 5AO	30
			20	Marmon '16-'17 4AG 20		20	5AG 10	Pord 15 SAC	
			20	5AG 30		20	Sincer '15-'19 5AG 5-15	Ford 16-17 5AG	20
	3AG 20						Singer 20 4AG 5-15	Westinghouse	
	6AG 20		15		Owen Magnetic		Standard E 5AG 5-15	Ford 3AG	15
	1AG 20		15	15AG 30		10		MOTORCYCLES	
Chevrolet '20-'22.	3AG 20		15	Marmon '19 4AG15-20			Standard F. G 3AG 15		
Cleveland	IAG 5		10	Master 5AG 15			Standard H. I. J 3AG 5-20	Fxcelsior 17-21 IAG	6
	3AG 15	Harroun '17-'21 3AG	15	Maxwell '14 4AG 15		10	Standard Trucks, 3AG 20	Harley Davidson	
	5AQ 30	Haynes '15-'20 1AG	5	Maxwell '15-'19 3AG 20	Paige '18' 1AG 2		Stanley '15-'17 17A 25	'16-'17 3AG	6
Chmber 6		Haynes 47, 48, 3AG	5	Maxwell '20 1AG 20			Stanley 735, 740 446 20	'18-'21 1AG	6
Columbia Truck, f	3AG 5-15		15	Maxwell '21-'22 3AG15-20			Steams 4 IAG 20	Henderson 3AG	6
	5AG 20		20	McFarlan '15-'16 5AG 5-10			Steams 8 3AG 20	Indian 4AG	13
		Trought and and a city		McFarlan '17-'20 5AG15-30				Reading 18-20. 3AG	18
Comet	3AG 5	All Others _ 17A		MC1 20 01 01 01 01 01 01 01 01 01 01 01 01 01	(OAG I	13	Stephens 3AG 20	mening 18-20 3AG	10

#### ASSORTMENT S. A. E. CASTELLATED NUTS.



No. 30. This assortment consists of 12 Nuts, case hardened, sizes from %-inch to %-inch.

No. 30. Price .....301 \$0.60

No. 31. This assortment consists of 50 Nuts, case hardened, sizes from ¼-inch to %-inch.

No. 31. Price ..... 908 \$1.50

#### ASSORTMENT S. A. E. PLAIN NUTS.

This assortment consists of 50 Nuts, case hardened, sizes from 14-inch to 54-inch.

#### No. 33 ASSORTMENT S. A. E. CAP SCREWS.

This assortment consists of 25 Screws, sizes from 4x1-inch to 5x1½ inch.

No. 33. Price.....556 \$0.90





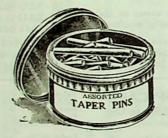
#### No. 39S ASSORTMENT LOCK WASHERS.

This assortment consists of 10 each, ¼-inch, ½-inch and ½-inch; also three each, ¼-inch, ½-inch and ½-inch.

#### No. 35 ASSORTMENT TAPER PINS.

This assortment consists of 50 Pins, sizes from 0 to 4, lengths from \(^3\)4-inch to 1\(^3\)4 inches.

No. 35. Price.....759 \$1.25





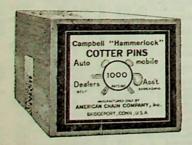
#### No. 36 ASSORTMENT COTTER PINS.

This assortment consists of 125 Pins of the best sizes for Automobile use.

No. 36. Price, each...93 \$0.20

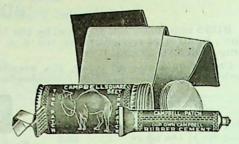
No. 36. Price, per dz.953 \$2.00

#### CAMPBELL HAMMERLOCK COTTER PIN ASSORTMENT.



#### Automobile Dealers' Assortment.

#### CAMPBELL SELF-VULCANIZING PATCHES.



Rubber Back.

#### A PERMANENT REPAIR.

It is made from a high grade of rubber similar to innertube stock, so that when applied it stretches in all directions with the tube, eliminating the strain at the edge. Campbell Patch will meet the requirements of all climatic conditions. Its sticking qualities are not affected by heat or cold, and when applied according to directions will not leak, loosen or creep, and will last as long as the inner tube.

ATTENTION.—This leading patch can also be used on Rubber Boots, Rubber Coats, Hot Water Bottles or anything Rubber will patch.

Carton contains complete outfit, consisting of Sheet Self-Vulcanizing Rubber Patch, One Tube Campbell Cement and Buffer

Small.	Price,	each	\$0.50
Medium.	Price,	each	1.00
Large.	Price,	each	1.75

#### MONKEY GRIP PATCHES.



Small Size.	Each304	\$0.60
Medium Size.	Each507	1.00
Large Size.	Each	1.75

#### STIMULATOR ALL-RUBBER PATCHES.

These cold patch outfits are furnished in a screw top tube containing sheet of rubber, tube of cement and buffer. This can be used to patch Rubber Coats, Rubber Boots, Rubber Hose, Auto Tops, as well as Automobile, Motorcycle and Bicycle inner tubes.

Price, each 187	
2006 Price, each 264	
2993	

#### MICHELIN CEMENT.



This Cement is made of pure dissolved para gum, undiluted. It is one of the best and strongest Cements that is possible to make. Put up in quantities to suit requirements of every purchaser.

2-oz. Tubes in display box. Price, per doz.....1009 \$1.80

#### DUTCH BRAND PATCHING CEMENT.



For all kinds of Rubber Patching Work. It makes patches stick and stay stuck.

#### DUTCH BRAND FRICTION TAPE.

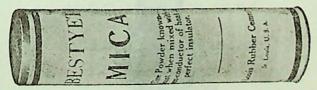


A strictly rubber compound is used, producing a good strong tape of excellent friction, and containing nothing to cause it to dry out. It is uniform, and can be used with equal satisfaction in any climate.

Put up in the following sizes:

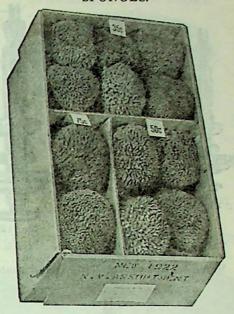
1-oz.	Rolls,	3/4	inch	wide,	16	rolls	to	lb.	Per lb401	\$0.75
2-oz.	Rolls,	3/4	inch	wide,	8	rolls	to	lb.	Per 1b403	.75
1/4-lb.	Rolls,	3/4	inch	wide,	4	rolls	to	lb.	Per lb 407	.75
1/2-lb.	Rolls.	3/4	inch	wide.	2	rolls	to	lb.	Per 1b382	.75

#### BEST YET MICA.



The best Tire Powder known. A superior grade of Mica, and not to be classed with the many imitations now on the market. This Mica, when combined with grease, makes a high-grade lubricant. It is a good non-conductor of heat, and a perfect insulator.

#### SPONGES.



#### ASSORTMENT No. 1922 NV.

Nassau Velvet unbleached cuts, a splendid cleaning sponge. Assortment consists of:

Shipping wt., 8 lbs. Corrugated shipping case, size, 27x16x14 inches.

#### ASSORTMENT No. 1922 NV1/2.

Packed in corrugated shipping case, size, 22x13x11 inches. Shipping wt., 5 lbs.

No. 1922. NV1/2 Assortment. Each........5604 \$8.80

#### SPONGES.

Rock Island Sheepswool Cuts, 8 to 10's.	Each 926	\$1.25
Cuba Sheepswool Cut, 8 to 10's.	Each 781	1.10
Nassau Velvet Cut, 8 to 10's.	Each 383	.65
Rock Island Yellow Cut, 8 to 10's.	Each 267	.45

#### CHAMOIS.

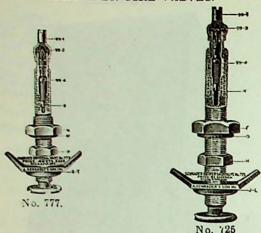


For automobile washing.

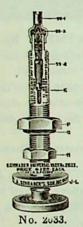
Fine quality, guaranteed washable.

				30 Skins.	Per Doz	Each	
No.	10.	Size,	18x22	inches18359	7756	751	\$1.25
No.	11.	Size,	20x24	inches22703	9552	956	1.50
No.	13-X.	Size,	24x27	inches30706	12908	1308	2.00

#### SCHRADER TIRE VALVES.



No. 777.	Valve for 21/2 and 3-in. Tire. Each241	\$0.34
No. 725.	Valve for 31/2 to 6-in. Tire. Each266	.38
No. 792.	Valve for 31/2 to 6-in. Tire, Demountable	
Rim		.40



Tire Valve for Pneumatic Truck Tires. Large Base Valve for Tires 6-in. and larger.

No. 2889-2792-2415 valves have similar base, but vary in

length; fittings on all interchangeable.

No. 2889. Valve for Wire Wheels 2%-in. from base to end; large thread on male.





No. 2026 Combination Rim Nuts and Dust Cap Bushings for No. 777 Valves:

No. 2026. Price, each	\$0.04
No. 2081. Rim Nut Complete, for No. 725 Valves, each.	\$0.04

### VALVE STEM PATCHES.

No. 1. For 3-inch and 31/4-inch tubes:	
Price, per dozen	\$2.20
No. 2. For 3½, 4, 4½, 5, 5½, 6-inch tubes:  Price, per dozen	

#### SCHRADER VALVE CAPS.



5 Caps to Metal Box.

For Use on Tire Valves.

#### SCHRADER VALVE INSIDES.



Used on All Types of Pneumatic Tire Valves.

Packed 5 in a Tin Box.	Twenty Boxes to a carton.	
Price, per 100	4207	\$6.00
Price, per box of 5	256	.30

#### SCHRADER UNIVERSAL DUST CAPS.



For Motor Tire Valves.

No. 2069.	Regular, each	\$0.05
No. 2070.	3/s-in. longer than 2069, each31/26	.05

#### SCHRADER QUICK ACTING DUST CAPS.



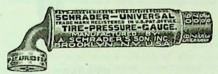
Made of brass and steel nickel plated and polished. In tended for the larger size tires, using a No. 725 type valve Simply slip cap over valve stem tap it at the top with the fingers and it automatically fastens itself up against the rim nut or felloe of the wheel.

Display carton of 12 sets, 60 caps23407 Display carton of 6 sets, 30 caps11701 Price per set of 5	\$30.00 15.00 2.50
	Display carton of 12 sets, 60 caps 23407 Display carton of 6 sets, 30 caps 11701 Price per set of 5 1956 Price, each 408

#### SCHRADER PRESSURE GAUGES.



Has large indicator, with white figures on black, making it easy to read. Furnished in leather case for carrying in pocket.



#### For Pneumatic Truck Tires.

With right angle foot, making it possible to use gauge between the spokes on heavy truck wheels. Indicating sleeve calibrated from 30 to 170 lbs.

#### TWITCHELL AIR GAUGES.



# The New Twitchell locks, showing "True pressure or none."

It may be applied in any position, eliminating stooping and fitting any diameter of wheel. It also opens valves in which the inside was screwed in too deep. The New Twitchell is the last word in Tire Gauge improvement.

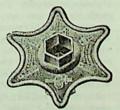
Price, each ......876 \$1.25

#### WHISTLER TIRE PRESSURE REGULATORS.



Does away with gauges. Simply set for the pressure desired, and apply air in the usual manner; when pressure is reached air will exhaust and give warning. No more air can be put into tire.

#### SCHRADER STAR WRENCHES.



For screwing down hexagon nuts on Motor Tire Valves. Hexagon on one side for 777 and on other for 725 Hexagon nut.

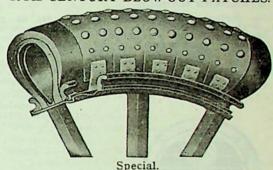
#### STANDARD INNER SHOES.



Highest grade material. Extra heavy fabric. Finished in white material, with red rubber tips. 7 to 10 layers.

	Price,	Price,
Size.	Each.	Per Dozen.
3 -inch	164 \$0.35	1802 \$4.20
3½-inch	188 .40	2043 4.80
4 -inch	201 .45	2281 5.40
4½-inch	236 .50	2649 6.00

#### 20TH CENTURY BLOW-OUT PATCHES.



Made of a really good grade of leather. Tread studded with steel rivets to give it wearing qualities. The hook is the same as used in "Reliable" patches. Easy to slip on rim.

		each\$1.10
		each
		each
		each
oxo		each

#### TIRE-DOH.

Tire-Doh is made by a secret process. It requires no tools nor heat—eliminates risk of burning or overcuring the rubber. It is applied with the fingers and becomes an actual and permanent part of the rubber.

Motorcycle tires and tubes, rubber boots, gloves, water bottles—anything of rubber, can be economically and permanently mended with Tire-Doh.



 Large size outfit
 706
 \$1.00

 Small or Junior Size Outfit
 352
 .50



#### MICHELIN MASTIC

Mastic is a substance for filling and cementing cuts in treads or parts of envelopes, and for repairing punctures and holes in inner tubes. Not a liquid, but a plastic cement. Full instructions furnished.

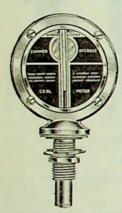
Each.

Price, 2-oz. Cans... 407 \$0.60



#### STANDARD MODEL.

No. 60—A perfect heat-recording instrument, with extremely broad ribbon-bore thermometer tube. Furnished in high-grade black enamel with nickel-plated retaining rings. Size, 3\%x5\%x5\%x1000 inches. Weight (packed in carton), 16 ounces. List ...\$10.00



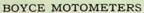
#### UNIVERSAL MODEL.



#### SPECIAL-FOR-THE-FORD MODEL.

No. 65—The beauty of this instrument on the radiator cap of a Ford, together with its utility, is an investment that every Ford owner should make, Complete with handsome radiator cap. Size, 2%x3% inches. Weight (packed in carton), 7 ounces.

List \$3.50





#### DE LUXE MODEL.

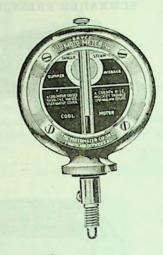


JUNIOR MODEL.



MIDGET MODEL.

No. 64—Especially designed to meet the demand of the small or light car owner. It combines accuracy with sturdiness of construction and fits on the regular radiator cap of all small cars. Size, 2¼x3¾ inches. Weight (packed in carton), 5 ounces. List



#### OVERLAND MODEL.

No. 66-The Overland type instrument is designed especially for Overland cars having an oval radiator cap, such as on the Overland "4".

d Overlan	ıd,	List										\$10.00
al Overla	nd,	Lis	t.									7.50
Overland,	Li	st										5.00
Overland,	L	ist										2.50
	al Overla Overland,	al Overland, Overland, Li	al Overland, Lis Overland, List	al Overland, List. Overland, List	al Overland, List Overland, List	d Overland, Listal Overland, List Overland, List Overland, List						

ordering, specify "Overland type".

NOTE-1920 Willys-Knight cars will take regular models.



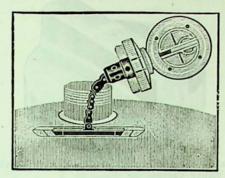
TRUCK AND TRACTOR MODEL.

No. 61-The Truck and Tractor Model BOYCE MOTO-METER has been designed especially for severe conditions, such as for use on trucks and tractors; diameter of thermometer tube is one-half inch, making breakage practically impossible; frame of the instrument is very substantial, and the thermometer tube thoroughly protected; casing is nickelplated, and the tube has a broad red column of indicating liquid, easily seen regardless of dust conditions so often met with in truck and tractor service. Size, 2%x4% inches. Weight (packed in carton), 16 ounces.

.....\$10.00

254 P. C. In lots of 10, 307 P. C. In lots of 20, 372 P. C.

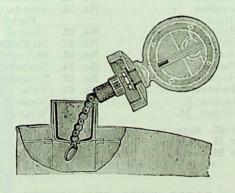
#### SCHLAICH LOCKS FOR BOYCE MOTO-METERS.



No. 1, No. 2, No. 3. Consists of nickel-plated nozzle with locking set-screw, channel bar with inside channel bar connecting to chain. The four lower rivets of the chain have split ends which can be taken out when shortening chain, making lock universal to any length radiator neck, all made of solid brass and adapted to 85 per cent of the cars manufactured.



No. 4. Consists of a nickel-plated brass plate (which takes the place of brass plate in radiator cap), hardened steel chain. pin and nickel-plated brass locking nut. For use in cars having bar in radiator neck into which the Boyce Moto-Meter is screwed.



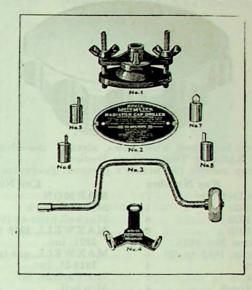
Nos. 5 and 8. Consist of a nickel-plated nozzle with a locking set-screw, spring V-shaped bar and ring, all of solid brass, and a nickel-plated brass chain connecting nozzle and bar.

	FOR BOYCE MOTO-METER MODELS.	
Cat.		Price
No.	Size	Each
1	34-inch. De Luxe, Truck and Tractor	.\$2.00
2	%-inch, Standard, Universal	. 1.80
3	76-inch. Junior, Ford, Midget, 76-inch Standard	. 1.80
4	Special. All Overland types	. 1.50
5	Special. *Nash and 1921 Oakland.	
8	Special. *Large Six Velie.	
-	the property of the second contract the property of the	

<sup>\*</sup>Prices same as Nos. 1, 2 and 3. Specify style of Moto-Meter when ordering.

264 P. C. Pkgs. 10, 336 P. C. 10 Unit Pkgs., 401 P. C.

#### BOYCE MOTO-METER RADIATOR CAP DRILLERS.



Greatly simplifies the installation of Boyce Moto-Meters. holds the radiator cap securely against rotation and enables one to center hole perfectly, a drill for every model. Complete outfit includes,

No. 1. Cap Driller Fixture.

No. 2. Wall Plate (with full instructions),

No. 3. Special Brace.

No. 4. Boyce Moto-Meter Wrench.

No. 5. "7" inch Drill (for "Junior" and "Midget" Models).

No. 6, "%" inch Drill (for "Standard" and "Universal" Models).

No. 7. "Overland" Reamer (for "Overland Type" Models).
No. 8. "%" inch Drill (for "De Luxe" and "Truck and Tractor" Models.

. Weight (packed in carton), 51/2 lbs.

Price, each ..... .....\$6.50 List Net.

#### REPLACEMENT PARTS PRICE LIST.

Drills (any size)	, each			 \$0.75
Brace, each				The second second second
Wrench, each				 50
		List	Net.	

#### REX RADIATOR CAPS.



Cap weighs 21/4 lbs.; length from tip to tip, 81/4 inches; furnished with or without hole for motometer. Unless specially instructed, cap will be furnished without hole, but a small counter-sink for starting the hole is on the inside.

In ordering, give name and model of car.

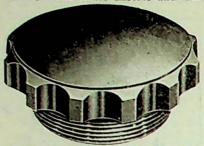
Price,	each			 	 \$3.50
Price.	each,	in lots of	10	 	 3.50

#### ULTRA RADIATOR CAPS FOR FORD CARS.



Tie	instn.	from t	ip to	tip, 6 /2	inches.	Weight, 1 lb.	
Price,	each						\$0.85
Price,	each,	in lot	s of	10			.85

AICO RADIATOR CAPS. Unbreakable, With Brass Inserts and Threads.

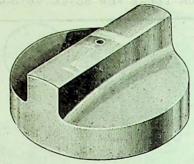


Some are furnished with holes, already moulded for insertion of Radiator Temperature Devices.

Every cap carries the maker's personal guarantee. Kev Number Key Number

Key Numb	er	Key Numb	er
Abbott Detroit	7	MARMON	12
Allen 1921	1	Maxwell truck	15
Allen 1920	8	Maxwell prior to 1918	3
Allen 1919	6	MAXWELL 1918 to	
		1921, inc.	15
American Six 1918	4		
American 1919 to '21	6	MAXWELL, gas tank	
Auburn	4	1918-21, inc.	15
Abbott	4	MacFarlane Six	6
Atlas truck	4	Mitchell	7
BUICK	12	Moon	7
		Monroe	7
Buffalo Tractor truck	4		
Bessemer truck,		NASH	11
model G	8	OAKLAND	11
CADILLAC	13	OLDSMOBILE 4 and	1
Case	7	6 cyl.	7
CHANDLER	6	OLDSMOBILE 8 cyl	. 7
CHEVROLET 490	3	Oldsmobile truck	7
Chevrolet FB	8	Olympian	4
COLE	6	PAIGE	6
Columbia Six	18	Paige gas tank	6
Crane Simplex	6	PEERLESS	8
Crawford	7	Pierce-Arrow	
Crow Elkhart	4	1914-15-16	6
	- 100 Y		0
Cunningham	16	Pierce-Arrow	_
Commonwealth	8	1917 to '21, inc.	7
CLEVELAND	15	Pilot	4
Chalmers	16	Pullman	4
Davis	6	Pan American	7
Daniels	6	Patterson	7
DODGE	1	REO	14
Dort	18	Reo gas tank	14
Du Pont	12	Ross 8	6
Elcar	4	Rainier truck	7
Elgin Capable 1918	4	Revere	7
		Carried Control of the Control of th	7
Elgin	6	Regal	7
ESSEX	18	Saxon	7
FORD	2	Sayers Six	7
Franklin gas tank	1	Scripps-Booth 1919	6
Grant	18	Scripps-Booth 1920	7
Haynes	7	Speedwell	7
Herreshoff			
	18	Standard Eight 1919	7
Henderson	6	Standard Eight	
HUDSON	18	1920-21	6
Hupp. N 1916-17	4	Stearns-Knight L-4	6
Hupp, late model	17	Stearns-Knight 1921	12
Hatfield			
	8	Stephens	7
Imperial	7	Studebaker	9
Jackson	8	Stutz, 1916-17	9 7 7
Jordan	10	Templar	7
King prior to 1919	7	Texian	4
King 1919-20-21	6	Vim 1917 and prior	6
		Vim 1917 and prior	
Krit	1	Vim 1918 to '21, inc.	15
Kissel Kar	10	Wescott	7
Lexington	7	WHITE	7
Liberty Six	7	Winton	16
Number. Price E			Each.
	.60	10 489	1.00
2 246	.40	11 483	1.00
		123668	.60
3 369	.50	13 632	1.10
4 482 1	.00		1.10
		14 637	
	.00	15 453	.85
	.00	16 486	1.00
8 488 1	.00	17 482	1.00
	.00	18 489	1.00
	The state of the s	1-1	

NO-WASTE GASOLINE TANK FILLER CAPS.



Cap is made of aluminum, furnished with leather washer.

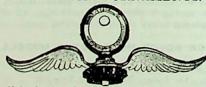
Packed in paper carton.

Caps will probably fit earlier makes of cars listed herewith, but up to this time we have only the measurements for 1921-1922 models. To save time and avoid mistakes, give the diameter and pitch of thread, whether male or female, on earlier models.

Tank Filler Caps will fit:

Tank	Filler Caps will fit:		
No. 74.	Allen.	No. 56.	King.
No. 72.	Apperson.	No. 75.	Kissell.
No. 67.	Auburn.	No. 54.	
	Buick.	No. 74.	
No. 79.			Liberty. Maxwell.
	Buick 4 Cyl. 1922.	No. 57.	
No. 53.		No. 54.	Mitchell.
No. 80.		No 55.	Monroe.
	Chandler.	No. 51.	
No. 74.	Chrevolet large	No. 60.	Nash.
	model.	No. 59.	National.
No. 51.	Cleveland.	No. 51.	
No. 73.	Cole.	No. 71.	
	Columbia,	No. 74.	
No. 51.	Commonwealth.	No. 62.	Paige.
No. 51.	Crowe Elkhart.	No. 55.	Pan American.
No. 64.	Cunningham.	No. 74.	Paterson.
No. 55.	Davis.	No. 78.	Peerless.
No. 51.	Dixie Flyer.	No. 61.	Pilot.
No. 75.	Dodge.	No. 76.	Premier.
No. 65.	Doris	No. 77.	R. & V. Knight.
No. 67.	Dort.	No. 50.	Reo.
No. 58.	Dort. Elcar. Elgin. Fissey	No. 69.	Roamer.
No. 51.	Elgin.	No. 63.	Saxon.
No. 67.	Essex.	No. 59.	Sayer.
No. 62.	Ford.	No. 51.	Scripps-Booth.
	Franklin.	No. 74.	Sheridan.
	Gardner.	No. 70.	Standard Car.
	Grant.	2.0	Eight.
	Hanley Knight.	No. 62.	Stearns Knight.
	Havnes.	No. 51.	Stephens.
	Holmes.	No. 66.	
No. 71.	Hudson.	No. 74.	
No. 51.	Hupmobile.	No. 67.	
No. 52.	Jackson.	No. 67.	Velie.
No. 74.	Jordan F.	No. 68.	
No. 67.	Jordan M.	No. 67.	
	,	700000000000000000000000000000000000000	
Nos. 50	to 67, inclusive. Price,	each	\$1.00
Nos. 68	to 75, inclusive. Price,	each	
Nos. 76	to 80, inclusive. Price,	each	
	503 P.		

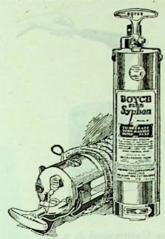
#### EAGLE WING ORNAMENTS.



10-inch polished aluminum, suitable for Ford size memeters.	oto-
Price, each	.75
14-inch polished aluminum, suitable for Standard and Versal motometer.	Jni-

Price, each ......504 \$1.00 Price, each, in dozen lots......459

#### BOYCE FIRE SYPHONS.



Shoots straight and kills fire instantly. Will not rust or corrode, equipped with radium dial which locates the instrument in the darkest room.

Valve parts made of genuine monel metal, positive and everlasting. Panic-proof handle; pumps easily, and springs into action when turned in either direction.

Price, each	\$12.00
Price, each, in lots of 58001	12.00
Liquid for above, quart cans	1.50

#### GUARDENE FIRE EXTINGUISHERS.

Approved and Labelled by the Underwriters' Laboratories,

Guardene Fire Extinguishers embody all the latest improvements in soda and acid machines. They are powerful enough to handle a free burning fire in its early stages, yet light and compact enough to permit extremely quick action. All fires are small at first and there are few fires that a Guardene won't handle if it is used during the first few minutes.



It is made of cold-rolled copper, burnished outside and heavily plated inside with non-corrosive metal. In the head is a "cage" which holds a bottle half-filled with sulphuric acid. The tank is filled with a solution of bicarbonate of soda.

To use the extinguisher it is simply turned upside down; the stopper falls out and the mixing of the acid with the soda solution generates a gas pressure that will throw a stream 40 feet. The stream can be shut off by turning the extinguisher right side up again.

Guardene Fire Extinguishers are tested to 350 pounds pressure, but the working pressure is only about 100 pounds.

As the cost of recharging these extinguishers is slight the upkeep expense is low. Guardene soda and acid recharges are scientifically compounded and absolutely accurate. They are standard recharges for Guardene Extinguishers or any standard soda and acid extinguisher.

Capacity, 2½ gallons. Weight filled, 40 pounds.

Price, each ......\$20.00



PYRENE FIRE EXTINGUISHERS.



Approved and Labeled by the Underwriters'
Laboratories, Inc.

Pyrene Fire Extinguishers are the safest and most efficient type for electrical and all fires starting in oil, gasoline, shellac, paints or other highly inflammable substances. Water only spreads oil fires and it is dangerous to use water on an electrical fire.

Insurance companies recognize the value of Pyrene and grant a 15 per cent reduction in automobile fire insurance when cars are equipped with Pyrene. Reduction in premium is also given for Pyrene equipment on other risks.

Extinguisher, complete with black enameled bracket. \$10.00 Liquid, per quart, ...... 1.50

254 P. C.



#### PYRENE PUMP TANKS.

DESCRIPTION: The tank is made of heavy 24-gauge galvanized sheet iron painted red and furnished with 24 inches of %-inch rubber hose and ½-in. nozzle. An asphaltum coating in the tank prevents corrosion. The double-acting pump is made of brass with a screen to keep it from becoming clogged.

OPERATION: The Pump Tank is extremely simple, fill it and pump; its five-gallon capacity is ample to extinguish a good-sized fire. The double-acting pump throws a powerful steady stream 50 feet. The force of this stream will beat its way through the flames and soak the burning material. This increases the fire fighting efficiency of the Pump Tank. The supply

of water or non-freezing solution can be renewed during operation, eliminating delay in recharging.

NON-FREEZING FEATURE: Used with Pyrene Freeze-Proof, Pyrene Pump Tanks; will not freeze at 40 degrees below zero. They take the place of three-gallon soda and acid extinguishers or fire pails or barrels where there is danger of freezing. Unlike fire pails or barrels, the Pump Tank will not accumulate dirt and rubbish and the closed top prevents evaporation.

To prevent freezing Pump Tanks should be charged with

Pyrene Freeze-Proof as follows:

No.1 Charge. Containing 10 lbs. Pyrene Freeze-Proof, prevents 5-gallon Pump Tank freezing at 10 degrees above Zero.

No. 1 Recharge. Price. \$2.25

No. 2 Charge. Containing 15 lbs. Pyrene Freeze-Proof, prevents 5-gallon Pump Tank freezing at 10 degrees below Zero.

No. 3 Recharge. Price.....\$4.50

254 P. C.

TIRE SAVER JACKS.

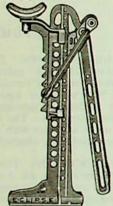


No. 2.

These Jacks can be set under Hub of Wheels or under Axle. Swivel Top, to make easy and proper adjustment under Hub. Swivel has heavy felt on top of same to avoid injuring plating or finished surface of Hub.

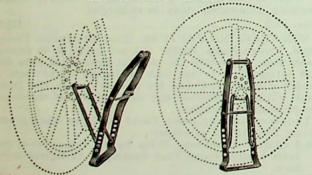
These Jacks have five adjustments in height to fit any size of wheel on any machine, and when once made, remain so. Aluminum finish. Weight, 26 pounds per set (4).

Same as No. 2, except has stationary top, with 2-inch lift for cars having 30-inch tires only. Weight, 24 pounds per set (4).



No. 3.

They have a swivel top to form proper adjustment under hub, and have felt on top of Swivel to prevent injuring Plating or finished surface of Hub.



The heaviest car can be lifted with one hand and all four wheels can be raised in less than one minute.

EVR-LASTIN GEAR COMPOUND.



Evr-Lastin Gear Compound is a gear and chain lubricant, and is the result of many years' experience in developing lubricants, and is one of the most unique achievements of oil and grease chemistry.

It is composed of five products, all relatively different, yet, collectively serving to make a strictly distinct lubricant unequalled for the lubrication of transmission and differential bevel, spur or worm gears.

Dark in color and very tenacious, it clings to the surface of the metal under heavy pressure, thereby preventing wear; its wonderful penetrating qualities will find the smallest crevices, bringing about perfect lubrication.

Because of its high viscosity, the Evr-Lastin Gear Compound will form a protective coating on the teeth of the gears, and will stick to them under any normal or abnormal working strain.



Attention, Dealers.

Free.—One self-measuring grease cabinet, as shown, with initial order for a barrel or half-barrel of Evr-Lastin Gear Compound. This puts you in a position to handle the Evr-Lastin Gear Compound in a clean, quick and most efficient way. The cabinet holds twenty pounds of compound, and will pump one-quarter of a pound to the stroke, enabling the operator to know exactly the amount put into the gears.

5	nound	Cama	Date.	Value of the last	Marie I and the state of	0.00
_	pound	Cans.	Price,	per	can\$	2.00
10	pound	Cans.	Price,	per	can	3.25
25	pound	Cans.	Price,	per	can	7.50
50	pound	Cans.	Price,	per	can	12.00
1/2	barrel.	Wood.	Price.	per	pound	22
1	barrel.	Wood.	Price,	per	pound	.20
1/2	barrel.	Steel.	Price,	per	pound	.24
1	barrel.	Steel.	Price	ner	pound	22

406 P. C.

# Genasco

#### MOTOR OIL.

The unequaled service given by Genasco Motor Oil is due to two definite factors.

First: Genasco Motor Oil is not like the average oil, but is made from a natural base which gives it remarkable lubricating and wear-resisting properties.

Second: Genasco Motor Oil is absolutely uniform in quality. This is due to the fact that the manufacturers of Genasco Motor Oil, The Barber Asphalt Company, own special processes for producing crude oil from a solid hydrocarbon. Consequently, the crude oil is always of a uniform character.

Genasco Motor Oil does not vary in quality.

Genasco Oil is of a unique Paraffine base and will maintain a film of lubrication over moving parts at high temperatures under the most severe working conditions. It holds its body and lasts longer.



50

#### GENASCO GREASE.

Genasco Grease is a perfectly blended compound consisting of the purest ingredients, and contains no adulterants. Especially made for lubricating steering gears, wheel bearings and for use in compression cups. It is a light golden color.

#### GENASCO TRANSMISSION OIL.

An unusually high-grade non-fluid oil and should be used for transmission and differential gears of all cars. It will not channel in cold weather, but insures proper lubrication and quiet running in all seasons.



Genasco	Motor	Oil,	per	Gallon.
---------	-------	------	-----	---------

	Drums	1 Drums	1 Drums	5 Gal.	1 Gal.	Quart
	50 Gals.	30 Gals.	15 Gals.	Cans.	Cans.	Cans.
Light	\$1.00	\$1.05	\$1.10	\$1.15	\$1.25	\$1.25
Medium .	1.05	1.10	1.15	1.20	1.30	1.30
Heavy	1.10	1.15	1.20	1.25	1.35	1.35
Extra Hear	vy 1.10	1.15	1.20	1.25	1.35	1.35

# GENASCO CUP AND TRANSMISSION GREASE, PER LB.

Drums.	½ Drums.	1/4 Drums.	5 Gallon.	1 Gallon.
0 Gals.	30 Gals.	15 Gals.	Cans.	Cans.
\$1.00	\$1.05	\$1.10	\$1.15	\$1.25

GENASCO TRANSMISSION OIL, PER GALLON.

1-lb. cans, 24 to case.	Per lb	\$0.25
5-lb. cans, 12 to case.	Per lb	_20
25-lb. cans, 2 to case.	Per lb	.18
50-lb. cans, 1 to case.	Per lb	.16
Drums, metal. Per lb		.12
Barrels, wood. Per lb.		.11

# GENASCO TRACTOR AND MOTOR CYCLE OIL, PER GALLON.

		½ Drums. 30 Gals.	¼ Drums. 15 Gals.	5 Gals. Cans.	. 1 Gal.
Med.		\$1.10	\$1.15	\$1.20	\$1.30
Heavy	1.10	1.15	1.20	1.25	1.35
Extra	Heavy 1.10	1.15	1.20	1.25	1.35

#### Grease Weight Approximately 8 lbs. to Gallon.

orease weight approximately o loss to canon.	
Average contents of drums400 li	bs.
Average contents of wood barrels400 l	os.
All goods F. O. B. St. Louis District.	
No charge for drums or cans which are in every can non-returnable	ise

Oil, 253 P. C. Grease, 356 P. C.

Full Cases. No Cases Broken.

#### DIXON'S AUTOMOBILE AND TRACTOR LUBRICANTS.

Dixon's are superior lubricants. They reduce friction directly by surface action, and indirectly by maintaining conditions that are most favorable to the operation of delicate bearings. Nothing has been overlooked in the effort to eliminate friction and wear.

The incidental benefits are numerous. Even such details as the abrasive action of road dirt, and metal particles in

the gear cases have been studied and nullified.

The usual resistance to gear shifting and the extra power required to start a car on a cold morning are forgotten in the presence of Dixon's. Cold does not cause it to stiffen and waste your gasoline.

Steady driving, especially under load, develops much heat in gear cases that causes undue wear of the ball and roller bearings, because they run less freely when overheated. Dixon's conducts away the excess heat and keeps the parts cool.

Space does not permit further illustrations, but we can assure you that Dixon's are in a class by themselves. There is nothing cheap, artificial or synthetic about them.

Spring Oil.



A handy lubricant for auto springs. Apply it to edges of springs and its creeps between the leaves, carrying a charge of superfine flake graphite. It cuts the rust and prevents squeaks. Properly lubricated springs add greatly to the pleasure of riding.

Grease No. 672.



Motor Graphite



A finely pulverized flake graphite of silky smoothness that protects metal from friction and wear. A teaspoonful occasionally fed to cylinders through the air intake when engine is running improves the compression and increases the power. It will not carbonize or foul the spark plugs. A paste of Motor Graphite and kerosene is a good lubricant for springs and wheel rims. ½ lb. tin cans (36 in case). Per can \$0.75

Gear Oil No. 675.



A wonderful oil for the worm-driven rear axles of trucks and tractors. It readily follows the gears and furnishes ample lubrication to the bearings. Put up in cans and bulk packages. Prices upon request.

Gear Lubricant No. 677.



No. 677 is a grease of medium density that is supreme as a lubricant for transmissions and differentials. It flows over the gears like oil, yet clings to the teeth under load and when the gears are idle—which ordinary oils fail to do. It provides the bearings with a durable lubricating film that prevents wear and reduces friction to a minimum. Neither hot or cold weather affect it.

You will realize from the first that your car handles more

easily, that there is more pleasure in driving.

Gears shift quietly, the rear axle is silent. And the smoother running is reflected in a decreased consumption of gasoline.

Cup Greases.



The highest type of Cup Greases on the market. They produce a lubricating film that eliminates friction and causes easy running. Use No. 3, except in hot climates where No. 5 is better. For grease cups, axles and steering gears. Specify density wanted when ordering. No. 3 is fine in high pressure grease guns.

fine in high pressure grease guns.

1-lb. tin cans (36 in case). Per lb.

5-lb tin pails (10 in case). Per lb.

45

10-lb. tin pails (6 in case). Per lb.

45

Non-Leak Grease No. 680.

Grease No. 676.

Unexcelled for water pump cups and clutch release collars. Will not melt and run out. If collars are fitted with grease cups, use Cup Grease No. 3.

#### DIXON'S FLAKE GRAPHITE.



This product is recognized the world over as the standard lubricating graphite; infinitely useful for steam engines, gas engines, air compressors, etc., also excellent for coating packings, gaskets, pipe fittings and the like.

This grade must not be used on Automobiles.

No. 632.	1-pound cans. Price, per can 408	\$ 0.45
No. 633.	5-pound cans. Price, per can1952	2.00
No. 632.	Price, per case, 1-lb cans (36) in case 13803	16.25
No. 633.	Price, per case, 5-lb. cans (10) in case. 18507	20.00

#### CLEAR THRU PENETRATING OIL.



#### Stops Squeaks, Kills Rust.

Used by auto and truck owners, garage men, machinists, repair men and all who use machinery. Squirt a few drops along the edge of each leaf, oil will seep out on the opposite side of the spring, after cutting out all rust and dirt and leaving a plentiful supply of graphite in its path.

Half pints, 24 cans per case. Price ......8006 \$14.00

#### EX-EL-ARD THREADING OIL.

- It cuts a deep and perfectly smooth thread, smoother than lard oil.
- 2. It does it with half the strength in hand cutting and half the power in power cutting.
- It cuts cool and easily that it causes a tremendous saving in dies.
- 10 gallon can. Price per gal.
   654
   \$1.00

   5 gallon can. Price per gal.
   706
   1.10

#### DIXON SOLID BELT DRESSING.



#### THREE IN ONE OIL.



Cans are packed one dozen in a display box.

#### HOLTON HOOD CLIPS.



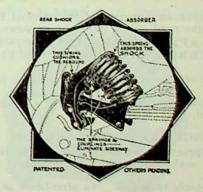


Ford.

Chevrolet.

When ordering state which model is wanted, Ford, Chevrolet 490 or Chevrolet F. B.

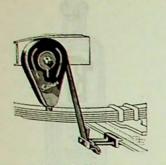
#### MAINWELL SHOCK ABSORBERS FOR FORD CARS.

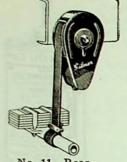


Absorb the shock, cushion the rebound, eliminate the sidesway. No change is made on the Ford, no perches are removed or changed. Fits all model Ford cars; roadster, touring, coupe, sedan, light delivery and the front of the truck. Packed 4 to the set in a corrugated carton.

256 P. C. In lots of 5 sets, 332 P. C.

#### BULL DOG BOUNCE ABSORBERS.





No. 12. Front.

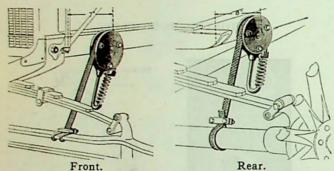
No. 11. Rear.

Check the rebound gently by friction of brake lining and strap on brake drum. They absorb every road shock.

Where cars are drilled at factory for absorber devices, use No. 12 for front and rear. For cars not drilled in rear, use No. 12 for front and No. 11 for rear. In ordering state year, model and name of car.

No. 11 and 12. Full set of four. Per set. .....\$24.00

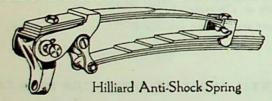
No. 11 and 12. Pair front or rear. Per pair ....... 12.00



No. 3 is a special Ford Model and is easily attached without drilling. No tools required other than wrench and screw driver.

No. 3. For Fords. Full set of four. Per set......\$15.00 No. 3. For Fords. Pair front or rear. Per pair..... 7.50 256 P. C. In lots of 6 sets 336 P. C.

HILLIARD ANTI-SHOCK SPRINGS FOR FORD CARS.



Hilliard Anti-Shock Springs aid the original Ford springs to withstand the road strain, either up or down.

POSITIVE REBOUND CHECK AT POINT "A" PRE-VENTS UP-THROW AND PROTECTS SPRING FROM BREAKING.

200 per cent efficient spring action added to original Ford

Hilliard Anti-Shock Springs are both a snubber and a shock absorber.

#### ALL SPRINGS BREAK ON UP-THROW.

The many practical features found in the Hilliard Anti-Shock Spring make it an added improvement to your car of true merit.

No special tools to install. No after-labor in dissembling axles for repairs.

Built in two-weight springs. Difference in spring steel 3/2-inch. Regulars for roadsters, five-passenger cars and coupes. Heavies for sedans and commercial cars.

 Regular Type. Per set.
 12253
 \$18.00

 Sedan Type. Per set.
 12256
 18.00

 One-Ton Truck. Per set.
 28001
 40.00

 301 P. C.
 40.00

#### HALLADAY SHOCK ABSORBERS.





Front Unit.

Rear Unit.

For Ford Cars.

Direct suspension. Easy riding.

Takes the jolts and jars out of the light Ford. The springs used are large and of ample capacity to absorb all the jolts and jars, thereby removing the cause of rebound.

No frictional bearings to interfere with spring action. Has

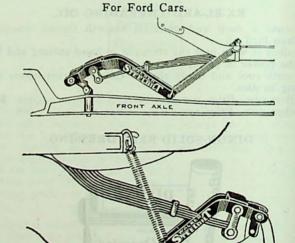
no light, breakable parts or parts to be lost.

Made for roadster, touring or coupe and sedan types of cars. Sedan type also suitable for light commercial truck. In ordering be sure and specify type of car. Each carton and absorber plainly marked. Packed one complete set of four in fibre carton. Weight, per set, 30 pounds.



#### Especially for One-Ton Ford Truck.

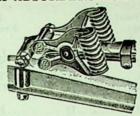
### IMPROVED STEELBUILT DOUBLE ARM.



Cantilever Type, made of steel throughout, arms, rear perches and bolts. They are lighter, stronger and unbreakable. The springs are made of oil tempered spring wire, and extra long, therefore more resilient, making riding more enjoyable.

REAR AXLE

### W-X SHOCK ABSORBERS FOR FORD CARS.



Simple and easy to attach.

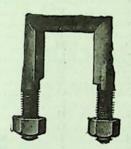
Requires no extra tools. You remove only the shackles, and put the W-X Shock

Absorbers in their place.

The W-X is rigid as to end or fore or aft movement, thus in no way affecting the regular spring mounting of the Ford

No. 1. For Ford Runabout:	
Price, per set of four5509	\$8.00
No. 2. For Ford Touring Cars:	
Price, per set of four5503	8.00
No. 3. For Ford Delivery Cars:	
Price, per set of four5501	8.00

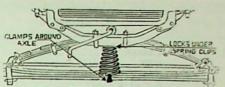
### Heavy, Half-Oval **Auto Spring Clips**



	For 1½	-inch	Springs	
Size No.	Flat	Stem	Over All	Per 100
150-A	1	3	3	\$30.00
150-C	Î .	7	21	34.00
150-D	1.3.	16 .	25	34 50
150-A 150-C 150-D 150-E	1.7	7.	3	35 00
	For 14	-inch	Springs	
175-B.	1 .	16 .	27	.\$36.50
175-C	13.	10 .	3	. 37.00
175-F.	13.	77	31	. 37.50
175-P.	1 4 :	77	37	. 39.00
175-II .	2	77	. 34	. 38.00
175-B . 175-C . 175-F . 175-P . 175-H . 175-J .	21	77	. 4	39.00
	77 0			
	FOF Z-	-inch S	prings	
200-B.	1 13 .		31	.\$39.50
200-E.	11.	10 .	3	. 39.50
200-G.	1 7 .	10 .	37	. 41.00
200-H.	1 16 .	10 .	41	. 41.50
200-HH	[2] .	16 .	41	42.00
200-L	11.		34	45.40
200-N .	1 7 .		37	46.00
200-P.	. 2 3	. į.	43	47.80
200-V	. 1 %		4	63.00
200-KK	2	2	. 4	63.00
200-77	2.1	10 .	43	69.00
200-AA	2 .	10 .	41	79.00
200-B . 200-E . 200-G . 200-H . 200-H . 200-N . 200-P . 200-V . 200-X Z 200-AA	T 01			
225-C	1 % .		4	\$48.60
225-B.	2 .	1 .	4	48.60
225-D .	1 5 .	· . 10 ·	4	64.50
225-C 225-B . 225-D . 225-P	2 1 .	8].	41	83.00
	For 21	-inch S	Springs	
050 0	0 23	1	41	024 00
250-D .	2 .	1 .	41	60 00
250-C				08.00
250-D . 250-C 250-M . 250-E .		· · 10 ·	41	70.20
250-E .	2 1 .		47	89.00

404 P. C.

#### A. R. G. AUXILIARY SPRINGS.



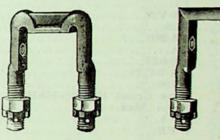
ARS Auxiliary Spring For Ford Double Clip Cars.



For Ford Single Clip Cars.

Forms a combination shock absorber and spring protector. Prevents broken front springs, worn out spring hangers. Specify if wanted for single or double clip cars. Price, each ......3256 \$4.00

#### SPRING CLIPS FOR FORD CARS.



-	-
Front.	Rear

Threaded, Drilled for Cotter Pins and equipped Castellated Nuts, 2 per Clip. Packed 25 in box.	with
Price, each, Front or Rear	\$0.40
Price, each, Front or Rear, no Nuts	.35
Ford Front or Rear Spring Clips.	
For 9-Leaf Springs, 41/4-in. long, with two Castellated N	Nuts
per Clip.	
Price, each, Front or Rear	.60
For 10-Leaf Springs, 4%-in. long, with two Castellated Poer Clip.	Vuts
Price, each, Front or Rear	.60

#### SPRING PLATES FOR FORD CARS.



For equipping 1921-2922 Model Ford with extra heavy 9-leaf springs.

Plate is drop forged, machined, ready to apply.

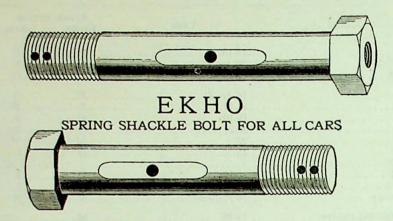
Take off old spring, put in new one and attach plates, no new clips furnished. 

#### EKHO SPRING SHACKLE BOLTS.

Buick   B24-B25   H	Name of Car	Model	Year	Front Spring Front Rear	Rear Spring Front Rear
Ashburn   S-39	Allen	Classic 41	16 to 19	C C	L
Auburn					P
Buick   B24-B25					
Buick		6 Cyl8 Cyl	17-20-21-22	NN	L
Buick	Buick	B24-B25			НН
Buick	Buick				J J .
Baick	Buick	B36-B37			J J .
Buick	Buick	C36-C37			
Buick   D45 D47   16-17   G   K	Buick	C24-C25			н.
Buick	Buick				
Buick	Buick				K
Buick	Buick				K
Buick   D34-D35   17					P
Buick					
Buick   H44-5-67   19					Н
Buick   H49-50   19					KX
Buick					X
Buick					X
Buick		K49-50	19-20		JX
Buick		21-44-45-46-47-48	1921-22		X
Cast	The state of the s		1921-22	H%x3½	X
Cadallac   55-61	Cadillas	55-57	16-19	R	S
Case					V
Case.   V20.V22					
Chalmers         24-29         14-15-16         D         M         T           Chalmers         263-26B         14-15-16         C         L         N           Chalmers         32A         15-         C         G         J           Chalmers         325A-6-53         16-17         C         G         I           Chalmers         335A-B-C-D         16-10-22         C         C         T           Chalmers         335A-B-C-D         16-10-22         C         C         T           Chalmers         335A-B-C-D         16-10-22         L         L         S           Chalmers         335A-B-C-D         16-10-10         C         H         H         H           Chalmers         335A-B-C-D         16-10         C         H         H         H         H         L         None         C         D         H         H         H         H         H         None         C         C         D					
Chalmers   26A 26B		24-29	14-15	D	O
Chalmers   32A		26A-26B	14-15-16	LL	NN
Chalmers   32B-633					
Chalmers         35A B-C D         16 to 22         C         C         T           Chandler         6 NS6         17-2021         L         L         S           Chevrolet         Baby Grand         H2H2½-H3-H4         13-16         G         G         D           Chevrolet         Royal         Mail         13-16         G         G         D           Chevrolet         FFA         18-19         H         I         None           Chevrolet         DFB         19-20-21-22         H         I         None           Cleveland         40         20-21-22         M         M         M         M           Cole         80         16-17         O         P         V           Cole         80         16-17         O         P         V           Columbia         G-F-H         18 to 22         F         H         N           Corw-Elkhart         K         18-22         D         D         D         D           Comet         C51-C53         17-20         U         U         V           Davis         H-1-K-Ser. 51 & 61         17 to 22         D         E         E					II
Chandler         6-NS6         17-20-21         L         L         S           Chevrolet         Baby Grand H2-H2½-H3-H4         13-16         G         H         H         H           Chevrolet         Royal Mail         13-16         G         G         D         D           Chevrolet         F-FA         18-19         H         I         None           Chevrolet         D-FB         19-20-21-22         M         M         M         M           Chevrolet         D-FB         19-20-21-22         M         M         M         M         M           Cleveland         40         20-21-22         M         M         M         M         M         M           Cleveland         40         20-21-22         M		35A-B-C-D	16 to 22		I
Chevrolet   Royal Mail   13-16   G   G   D		6-NS6	17-20-21		S
Chevrolet   F.FA   18-19	Chevrolet	Baby Grand H2-H21/2-H3	3-H413-16	G	НС
Chevrolet	Chevrolet	Royal Mail			
Cleveland	Chevrolet				
Cole			19-20-21-22		
Cole         S70-890         18 to 22         O         P         V           Columbia         G-F-H-I         18 to 22         F         H         N           Crow-Elkhart         CE33-CE35         16-17         C         C         C         C           Crow-Elkhart         K         18-22         D         D         D         D           Comet         C51-C53         17-20         U         U         U         V           Dodge         All         15-16-17-18-19         B         B         L         D         E         E         E         D         D         E         E         E         D         D         E         E         E         D         D         E         E         E         D         D         E         E         E         D         D         E         E         E         D         D         E         E         E         D         D         E         C         C         L         L         D         D         E         D         D         E         D         E         D         D         E         D         D         E         D         D         <					
Columbia					
Crow-Elkhart   CE33-CE35   16-17   C   C   C   C   C   C   C   C   C		870-890	18 +0 22		
Crow-Elkhart   K		amos amos	16.17	C C .	
Davis					
Davis         H-I-K-Ser. 51 & 61         17 to 22         D         E         E           Dodge         All         15-16-17-18-19         B         B         L           Dodge         All         19 to 22         C         C         L           Dorris         9-80         18 to 22         O         P         P           Dort         4         1915         B         B         L           Dort         5-5A-6-8-9-10-11-15-17A         1915 to 21         D         E         O           Dort         17-19         M         M         N         N           Elgin         6         17         S         S         S         V           Elgin         6-H-K-K-I         18 to 22         T         T         T         V           Elgin         6-H-K-K-I         18 to 22         S         S         U         U         Essex         A3rd, 4th, 5th, 6th, Ser         18-12-22         O         P         V         V           Franklin         All         18 to 22         R         R         R         R         R         G         Grant         G-C         C         C         R         G		· · · · · · · · · · · · · · · · · · ·			VU
Dodge	Comet			On the late of	1 0 30
Dodge	Davis	H-I-K-Ser. 51 & 61			ED
Dort	Dodge	All	15-16-17-18-19	ВВ	L
Dort	Dodge	A11	19 to 22	C	C
Dort	Dorris	6-80	18 to 22	P	0
Dort	Dort	4	1015 01	ВВ	L
Elgin         6         17         S         S         V           Elgin         .6 H-K-K-I         18 to 22         T         T         T         V           Elcar         .DHGK         19 to 22         S         S         U         L         Essex         .A3rd, 4th, 5th, 6th, Ser         18-21-22         O         P         V         V         Essex         .A3rd, 4th, 5th, 6th, Ser         18-21-22         O         P         V         V         V         Essex         .A3rd, 4th, 5th, 6th, Ser         18-21-22         O         P         V         V         C         C         R         <	Dort	5-5A-6-8-9-10-11-15-17A	1919 to 21	M M	O
Elgin       6-H-K-K-I       18 to 22       T       T       V         Elcar       DHGK       19 to 22       S       S       U         Essex       A3rd, 4th, 5th, 6th, Ser       18-21-22       O       P       V         Franklin       All       18 to 22       R       R       R         Gardner       G-H       21-22       C       C       C       R         Grant       G-GX       18-19       F       F       I         Grant       H-HY-HX       20 to 22       R       R       R         Haynes       30-33-34-35       15-16       E       E       T       T         Haynes       38-39-43-44       18-19       S       S       1"x5"         Haynes       45-47-48-50-55-57       20 to 22       T       S       1"x5"         Hudson       54       14       J       J       T         Hudson       5-40       15       E       E       T         Hudson       5-40       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser					
Elgin       6-H-K-K-I       18 to 22       T       T       V         Elcar       DHGK       19 to 22       S       S       U         Essex       A3rd, 4th, 5th, 6th, Ser       18-21-22       O       P       V         Franklin       All       18 to 22       R       R       R         Gardner       G-H       21-22       C       C       C       R         Grant       G-GX       18-19       F       F       I         Grant       H-HY-HX       20 to 22       R       R       R         Haynes       30-33-34-35       15-16       E       E       T       T         Haynes       38-39-43-44       18-19       S       S       1"x5"         Haynes       45-47-48-50-55-57       20 to 22       T       S       1"x5"         Hudson       54       14       J       J       T         Hudson       5-40       15       E       E       T         Hudson       5-40       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser	Elgin	6	17	SS	VV
Elcar.         DHGK.         19 to 22.         S.         S.         U.           Essex.         A3rd, 4th, 5th, 6th, Ser.         18-21-22.         O.         P.         V.           Franklin.         All.         18 to 22.         R.         R.         R.         R.           Gardner.         G.H.         21-22.         C.         C.         C.         R.         R.           Grant.         G.GX.         18-19.         F.         F.         I.         I.         G.         G.         R.	Floin	6-H-K-K-I			VV
Essex       A3rd, 4th, 5th, 6th, Ser       18-21-22       O       P       V         Franklin       All       18 to 22       R       R       R         Gardner       G-H       21-22       C       C       R         Grant       G-GX       18-19       F       F       I         Grant       H-HY-HX       20 to 22       R       R       R         Haynes       30-33-34-35       15-16       E       E       E       T         Haynes       38-39-43-44       18-19       S       S       1"x5"         Haynes       45-47-48-50-55-57       20 to 22       T       S       1"x5"         Hudson       54       14       J       J       J       T         Hudson       540       15       E       E       E       T         Hudson       540       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser       M       N       V	Floar	DHCK		SS	U
Gardner         G-H         21-22         C         C         R           Grant         G-GX         18-19         F         F         I           Grant         H-HY-HX         20 to 22         R         R         R         R           Haynes         30-33-34-35         15-16         E         E         E         T         H           Haynes         38-39-43-44         18-19         S         S         1"x5"         Haynes         45-47-48-50-55-57         20 to 22         T         S         1"x5"         Hudson         54         14         J         J         J         T         T         Hudson         540         15         E         E         E         T         Hudson         540         16         Q         O         V         V         Hupmobile         N-R         16 to 22         C         D         S         S         S         S         S         S         C         D         S         S         C         D         S         O         V         N         N         N         N         N         N         N         N         N         N         N         N         N         N	Essex	A3rd, 4th, 5th, 6th, Ser	18-21-22	P	P
Gardner         G-H         21-22         C         C         R           Grant         G-GX         18-19         F         F         I           Grant         H-HY-HX         20 to 22         R         R         R           Haynes         30-33-34-35         15-16         E         E         E         T           Haynes         38-39-43-44         18-19         S         S         1"x5"           Haynes         45-47-48-50-55-57         20 to 22         T         S         1"x5"           Hudson         54         14         J         J         J         T           Hudson         540         15         E         E         E         T           Hudson         540         16         Q         O         V           Hupmobile         N-R         16 to 22         C         D         S           King         E-EE 1st Ser         M         N         V           King         E-F-G-H         16-19         M         N         V	Franklin	All	18 to 22	RR.	RR
Grant.         G-GX         18-19         F         F         I           Grant.         H-HY-HX         20 to 22         R         R         R           Haynes.         30-33-34-35         15-16         E         E         E         T           Haynes.         38-39-43-44         18-19         S         S         1"x5"           Haynes.         45-47-48-50-55-57         20 to 22         T         S         1"x5"           Hudson.         54         14         J         J         T           Hudson.         540         15         E         E         E         T           Hudson.         5-40         16         Q         O         V           Hupmobile.         N-R         16 to 22         C         D         S           King.         E-EE 1st Ser         M         N         V           King.         E-F-G-H         16-19         M         N         V					
Grant.       H-HY-HX       20 to 22       R       R       R         Haynes.       30-33-34-35       15-16       E       E       T         Haynes.       38-39-43-44       18-19       S       S       1"x5"         Haynes.       45-47-48-50-55-57       20 to 22       T       S       1"x5"         Hudson.       54       14       J       J       T         Hudson.       540       15       E       E       T         Hudson.       540       16       Q       O       V         Hupmobile.       N-R       16 to 22       C       D       S         King.       E-EE 1st Ser       M       N       V         King.       E-F-G-H       16-19       M       N       V	Gardner	G-H	19.10		
Haynes.       30-33-34-35       15-16       E       E       T         Haynes.       38-39-43-44       18-19       S       S       1"x5"         Haynes.       45-47-48-50-55-57       20 to 22       T       S       1"x5"         Hudson.       54       14       J       J       T         Hudson.       5-40       15       E       E       T         Hudson.       5-40       16       Q       O       V         Hupmobile.       N-R       16 to 22       C       D       S         King.       E-EE 1st Ser.       M       N       V         King.       E-F-G-H       16-19       M       N       V	Grant	u uv uv	20 to 22	P P	D '''
Haynes       .38-39-43-44       18-19       S       S       .1"x5"         Haynes       .45-47-48-50-55-57       20 to 22       T       S       .1"x5"         Hudson       .54       14       J       J       T         Hudson       .540       15       E       E       T         Hudson       .540       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser       M       N       V         King       EE-F-G-H       16-19       M       N       V					
Haynes.       38-39-43-44       18-19       S.       S.       1"x5"         Haynes.       45-47-48-50-55-57       20 to 22       T.       S.       1"x5"         Hudson.       54       14       J.       J.       T.         Hudson.       540       15       E.       E.       T.         Hudson.       540       16       Q.       O.       V.         Hupmobile.       N-R.       16 to 22       C.       D.       S.         King.       E-EE 1st Ser.       M.       N.       V.         King.       EE-F-G-H.       16-19       M.       N.       V.	Haynes	30-33-34-35	15-16	EE	E
Haynes       .45-47-48-50-55-57       .20 to 22       T       S       .1"x5"         Hudson       .54       .14       J       J       T         Hudson       .540       .15       E       E       T         Hudson       .540       .16       Q       O       V         Hupmobile       N-R       .16 to 22       C       D       S         King       E-EE 1st Ser       M       N       V         King       EE-F-G-H       .16-19       M       N       V	Havnes	38-39-43-44		SS	1"x5"S
Hudson       54       14       J       J       T         Hudson       540       15       E       E       T         Hudson       540       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser       M       N       V         King       EE-F-G-H       16-19       M       N       V	Havnes	45-47-48-50-55-57	20 to 22		1"x5"T
Hudson       540       15       E       E       T         Hudson       540       16       Q       O       V         Hupmobile       N-R       16 to 22       C       D       S         King       E-EE 1st Ser       M       N       V         King       E-F-G-H       16-19       M       N       V	Hudson	54		JJ	T
Hupmobile.       N-R.       16 to 22.       C.       D.       S.         King.       E-EE 1st Ser.       M.       N.       V.         King.       E-F-G-H.       16-19.       M.       N.       V.	Hudson	540		EE	
King E-EE 1st Ser	Hudson	5-40	16	Q0	P
King EE-F-G-H. 16-19. M. N. V.	A STATE OF THE PARTY OF THE PAR				
King EE-F-G-H 16-19 M N V	King.	E-EE 1st Ser		MN.	V
771 1 420 40 15 17 40 10 D	King	EE-F-G-H			V0
Kissel ,4-36-6-42	Kissel	,4-36-6-42			D
Kissel	Kissel	45CB	20 to 22	TT	WT

#### EKHO SPRING SHACKLE BOLTS.

Name of Car	Model	Year	Front Spring Front Rear	Rear Spring Front Rear
Lavington	6R	19.10	DE	N
	S20 Ser. T	20 to 22	LN	SN
Liberty	10B-C-D	17-19 to 22	F	
Marmon	.34	16 to 21	Н	Special Special
	.15	14-17	F	G
Maxwell	. 25	18-19	F	S
	5	20-21	G	S
Maxwell	. ½5		M	RM
Mitchell	242-D42	10		
Mitchell		16-19	H I	· · · · · · · · · · · · · · · · · · ·
Monitor	2-M	17-18-20	I. I	
Moon	66-Victory	16-17-19-20	NN	UN
.4				
Nash	. ;81-682-683-684-685-686			TN
Nash	87-691-697	20-21-22		
	. 1-42-43-44	16 10	NoneN	РМ
National		20 to 22	None M	P
. частопат				Y
Oakland			FF	L
Oakland	. 4-34B	15-19	G	R Н
Oakland	. 9-50	15-16-17	H	SI
Oakland		20-21-22	MM	
Oldsmobile		14-15		
Oldsmobile				Н
Oldsmobile		16-17-18-19		I
Oldsmobile	7A-Rd. & Sedan			U
Oldsmobile	5B-46-37A-37-43A-47	. 19 to 22	T T	U
Overland	1-83-83B	15-16	BB	D C
Overland		15-16	LL	
Overland	75-75B	16-17	BB	BB
Overland	00 C.C90 Rds	16-17	BB	NO
Overland	84B	16-17	LL	N
Overland	35-4, 85-6	17-18		P
Overland		17-19		N0
Overland				
Overland	L	19-20-21	нн	НН
Packard	.2-38, 3-38, All	14-15	MM	NN
Packard	.All	16-18	M	TN
Packard	.3-35-116	18 to 22		V
Paterson	.347-650-652	19 to 22	NN	P
Paige			N	
	.16			
Paige	.'6	15-16-18	NN	Q
	.18-39			Р
Paige	. 1	18.10	N N	Q
Paige	.42	19-20	N M	0
Paige	.55	19-20	N. M	0
Paige	44		NM	7/8 x 5 1/2 O
Paige	.66	20-21-22	N	7/sx5½0
Peerless	.56 Ser. 1 to 7	16-18 to 22	B	EB
Premier	.A	14-15	NN	
Premier	3B	17	S	T
Page	All 6 Cyl	15.19	M M	. O B
Reo	All 4 Cyl	. 16-19	M M	N D
Reo	5 Cyl	. 20 to 22	M M	Special
				The state of the s
Scripps-Booth	c	15-17	LL	B
Scripps-Booth	.D		LL	L
Scripps-Booth	.5 Cyl	18-19	F	R
Stearn-Knight	L-4, 8	15-18	NN	Р
Studebaker	6, 4-6	10.10		J
Studebaker	SH4 Ser. 19	18-10 to 22	H	I
Studebaker	EG6 Ser. 19, EH6 Ser. 19	15-20 to 22	D P	
Velie	.22-27-28-38	16 to 21	S	1"x4"
Westcott	4-40	13-14	NN	ON
Winton	22A-22		SS	TS
Winton	.24-25-40	20 to 22	T	T T



Cut from solid bar steel, drilled, milled and tapped to fit any standard 1/8" grease cup, oil cup, or high pressure lubricating system fitting, the heads are somewhat longer to allow for additional stock when tapped for oil cups, etc Case-hardened and carbonized and finished to close limits, have two cotter pin holes, 1/4" apart to allow for adjustment of castellated nuts. Note—In cases where some cars use special heads for special oil cups, etc., the size of bolts mentioned can be used but will not be exact duplicate of car manufacturers specifications. Packed 10 to a box for refiller purposes.

Code Letter.	Dia. of Bolts, Inches.	Length under head, Inches.	Price, per 100
A	1/2	23/4	\$ 53.75
В	1/2	3	55.00
C	1/2	31/4	56.25
D	1/2	31/2	57.50
E	1/2	3¾	58.75
F	1g	3	58.75
G	Po	31/4	60.00
Н	1°c	31/2	61.25
I	Pc	3¾	63.75
J	1g	4	66.25
K	1g	41/2	71.25
L	5/8	31/4	77.50
M	%	31/2	82.50
N	5/8	3¾	88.75
0	5/8	4	93.75
P	5/8	41/4	97.50
Q	3/8	41/2	100.00
R	3/4	31/2	85.00
S	3/4	3¾	90.00
T	3/4	4	98.75
U	3/4	41/4	103.75
v	3/4	41/2	107.50
w	3/4	43/4	112.50
x	7/8	43/4	150.00

254 P. C. Std. Pkg., 10, 336 P. C.

#### SERVICE DISPLAY CABINET.

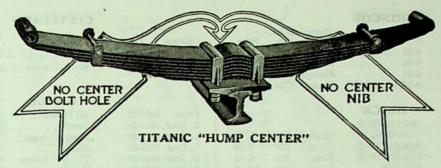


Furnished free; contains 113 bolts of all sizes.

Five each of sizes A to Q. Four each of sizes R to X.

403 P. C.

## TUTHILL TITANIC SPRINGS

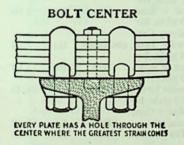


### GUARANTEED FOREVER AGAINST CENTER BREAKAGE

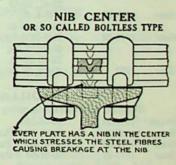
Guaranter: TITANIC Patented Hump Center Springs are guaranteed FOREVER against center breakage. All Titanic Springs are guaranteed for one year against breakage or sagging at any point. They are further guaranteed to match the original in height and all important dimensions.

### WHY TITANICS PREVENT BREAKAGE

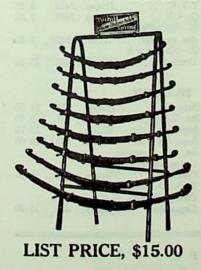
The different methods of holding springs together at the center are illustrated below. These illustrations clearly show why Titanics with the Patented Unbreakable Hump Center are the only springs guaranteed forever against breakage at the center. The Hump Center is an exclusive Titanic feature and with the few exceptions indicated all Titanic Springs listed are so made. Titanic Springs are made of a very fine quality of steel, carefully tempered. They are thoroughly lubricated and have exceptionally easy riding qualities.







### TITANIC SERVICE STATION RACK AND SIGN



A few best selling Titanic Springs displayed on the hand-some bronze finished metal rack illustrated, will attract spring replacement business. Titanic Springs are plainly stenciled and stock numbers are stamped in the steel. Printed tags give full information as to make, model, and year for which spring is intended.

Ask us how you can secure this Display Rack and other supplies FREE.



THESE SUPPLIES ARE SENT WITH THE DISPLAY RACK

- Heavy Metal Outdoor Service Station Sign.
- 2. Attractive decalcomania Window Sign.
- 3. Brass Sign for use on
- Display Rack.
  4. Large Wall Poster
  Price List.
- 5. Assorted Literature.

# TUTHILL TITANIC SPRINGS

BRISCOE	CLEVELAND
Location Year Model Style No. Price	Location Year Model Style No. Price
Front 1917-18-19	Front 1919-22 40-41
Front. 1920-21 4-34 Hump . 1733 6.90	Rear 1919-22 40-41 Touring
Rear1917-18-194-24	Real1919-2240-41 Touring11ump3601 11.35
Rear1920-214-34 Tour. & Rd Hump1734 10.95	A Common or
	DODGE
BUICK	Front1915-22All Models
Front	L. Rear . 1915-20 Touring
34-35-36Hump 200 5.75	L. Rear. 1915-20 Road & Coupe Hump 1157 7.35
Front1914-15B24-25-C24-25Hump 227 7.50	L. Rear . 1915-20 Sedan
Front 1914-15 B36-37-C36-37 Hump 230 8.85	U. Rear. 1915-20 Tr., Rd., Coupe Bolt1152 3.30
Front. 1915-16	L. Rear . 1921-22 Touring Hump 1153 8.70
Front 1916-17 D44-D46 Hump 258 9.75 Front 1916-17 D45-D47 Hump 260 8.55	L. Rear 1921-22 Road. & Coupe Hump 1155 7.95 L. Rear 1921-22 Sedan Hump 1156 9.75
Front. 1916-17-18. D34-35, E34-35. Hump. 266. 6.00	1. Rear. 1921-22 Sedan
Front. 1918-19-20 E44-45-46-47,	Cadming Delibre 1 Mais 111 String 1200
H44-45-46-47,	DODGE TRUCK
K44-45-46-47Hump 275 10.35	Front1917-22 Commercial Hump1175 6.45
Front1918-19-20 E49-50, H49-50	L. Rear . 1917-22 Commercial Hump 1176 10.80
K49-50	are transquir he bas Jayled in telle
Front 1921-22	
Front. 1921-22 22-44, 22-45 Hump. 281. 10.50 Front. 1921-22 21-47, 22-47 Hump. 282. 9.45	DORT
Front. 1921-22. 21-47, 22-47 Hump. 282. 9.45 Front. 1921-22. 21-46, 21-48,	Front1917-20 All Models Hump1452 8.40
21-49, 21-50,	Front1921All Models
22-46, 22-48,	Rear1917-205-5S-6-9-11-15Hump1451 13.65
22-49, 22-50 Hump 283 11 . 10	Rear192112C-17
Front192222-34,35, 36, 37 Hump 284 6.30	July and a state of the Halledon
L. Rear. 1915	DECEN
Rear. 1916-17. D35. Hump. 267. 10.25	ESSEX
Rear 1916-17-18 D45-D47-E45 Bolt 261 17.85	Front1919-22A
Rear1919-22 H44-H46-K44-K46, 21-44, 21-46,	Rear1919-22A, Tour. & Sedan Hump 3703 12.75
21-47, 21-48,	Attent out Alon 8 to Style at 2 chi
22-44, 22-46,	FORD
22-47, 22-48Bolt 276 19.95	Front All Years T-7 plate, for
Rear1919-22 H45-K45,	Tour. & Road, Hump. 102. 6.00
21-45, 22-45Bolt 277 22.05	Front All Years T-9 plate, for
Rear1919-22 H49-H50-K49-K50,	Delivery Cars,
21-49 21-50, 22 40 22 50 Polt 280 25 80	Trucks, Taxis, etc.Hump 111 7.00
22-49 22-50, Bolt. 280 25.80 Rear. 1922	RearAll YearsT-8 plate, for
10011022	Tour. & Road Bolt 105 12.00
CADILLAC	Rear All Years T-9 plate recom-
(Supplied with extra long spring clips, no charge.)	mended for Sedans. Bolt 115., 15.45 RearAll YearsT-10 plate, for
Front 1917-21 55-57-59	Delivery Cars.
Rear. 1917-21	Taxis, etc Bolt 113 17.00
Rear 1917-21 55-57-59 5 Pass Hump 333 16.55	RearAll Years1 Ton TruckBolt 114 8.10
Rear1917-2155-57-59 7 Pass Hump 334 17.75	
	Land Training of Co. Line
CHALMERS	GRANT
Front 1917-21 35B, 35C, 6-30 Hump 525 7 . 50	Front 1915-16-17
Rear 1916-21 35A, 35B,35C, 6-30 Hump 524 12.75	Front. 1918-19 G—GX Hump . 2452 7.00
	Front 1920-21 H—H2 (with special
CHANDLER	clips, no charge) Hump 2454 9 . 65  Rear 1920-21
Front 1917 22 All Models Hump 1655 10.65	Touring
Rear 1917-22 Touring Hump 1657 16.50	Touring
TOTAL STREET, SO SHOULD SHOULD BE SH	invi botarisolis
CHEVROLET	HUDSON
Front1914-15-16H2-H4Hump 825 6.90	Front. 1916-17-18 Super Six Hump. 631 11.55
Front1916	Front 1919-22 Ser. O Super Six Hump 637 9 . 45
Front 1917-18-19 490 Bolt 841 6.00	Rear 1916-17 Super-Six Tour
Front. 1918-21 D-FA2-FA5-FB Hump 837 8.10	Rear 1918 Super-Six Tour Hump 633 16.05
Front. 1920-21 490 Bolt. 842 5.70	Rear 1919-22 Ser. O Super-Six
Rear 1916-19 490 Bolt 833 8.55 Rear 1918-19 FA2 Bolt 838 10.50	Coupe, Speedster, CabrioletHump 636 15.96
Rear 1918-19 FA2 Boit 838 10.50 Rear 1918-21 D-FA5-FB-TouringBolt 839 12.75	Rear. 1919-22 Series O Sedan, 7
Rear 1920-21 490 Roadster Bolt 843 7.05	Pass. Phaeton,
Rear. 1920-21 490Tour, & Sedan Bolt. 844. 8.85	LimousineHump 642 16.20
	10.20
The state of the s	Li releasi alli

## TUTHILL TITANIC SPRINGS

III DAODU E	OVERVAND.
HUPMOBILE  Center Stock	OVERLAND Center Stock
Location Year Model Style No. Price	Location Year Model Style No. Price
Front1915-16-17K-N	Front. 1912-16
Front1919-20R	Front. 1916
Front 1921 R	Front. 1916
Rear1915-16-17K-NHump 713 11.55	Front. 1917-18 85-4. 85-6
Rear 1918-19-20 R Hump 720 11.40 Rear 1921 R Hump 723 10.80	Front 1917-20
Rear. 1921	Front. 1917-18-1990 Hump 441 6 7
	Front1920-21Light 4Bolt444 4.8
LIBERTY	Front 1920-21 20 (Willys-Knight) Hump 446 7.0
	L. Rear 1916
Front 1916-21 10A-10B-10C	Rear. 1916-19 75-75B-90 Road Hump . 443 10.0
Rear1916-2010A-10BTouring. Hump390110.35	Rear1916-1975-75B-90 Tour Hump 44211
Rear192110C All Models Hump 3902 10.95	Rear. 1920-21 Light 4 Bolt 445 6.6
	Rear R. 1920-21
MAXWELL	10car 151520-2120 (willys-anigus) 11ump 4-16 12.5
	PAIGE-DETROIT
Front 1914-19	Front19166-36, 6-38Hump1913 8.5
Front 1920-21	Front 1916
. Rear . 1914-15-16	Front. 1917-20. 6-39. Hump 1916. 8.1
. Rear . 1917	Front 1917-21 6-51, 6-55
Rear. 1918-20. 25 Touring Hump. 1527. 9:45 Rear. 1921. 25 Touring Hump. 1530. 9:60	Front 1920-21-22 6-42, 6-44 Hump 1918 10.2
	Front. 1921-22 6-66 Hump 1921 12.7
	Rear1916-206-36, 6-38, 6-39Bolt191212.3
MAXWELL TRUCK	Rear1920-21-226-42, 6-44 Tour Hump. 1919 23.7
	Rear1921-22 6-66 Touring Hump . 1920 26.7
(Supplied with special spring clips, no charge.) Front. 1918-21	REO
17011c1310-21172 1011	Front 1916-22 Fifth-T-M-TS Hump 2213 8.2
	Front. 1915-19. Sixth
NASH	L. Rear : 1913-17 Fifth Hump . 2207 9.60
	Rear 1915-19 Sixth Bolt 2212 18 30
Front 1918-21 All 6 Cyl Models . Hump 1003 11 . 70	Rear1918-19 Fifth-T-M-TS, Ser.
Front 1921	AHump., 2214., 15.4
Rear 1918-21 686	Rear 1922 TS, Series B Hump 2215 16.2
Rear. 1918-21 681-683-687 Hump 1006 18.75 Rear. 1918-21 682-684-685 Hump 1004 20.55	REO TRUCK
Rear 1921 4 Tour Hump 1009 14.10	
real	(Speedwagon)
	Front 1917-21 F 9Plate Regular Hump . 2250 9.6 Rear 1917-21 F 9 Plate Regular Hump 2251 13.0
OAKLAND	Rear1917-21 F 9 Flaterlegular. Hump. 2251 13.0
	STUDEBAKER
Front. 1916-19 32B-34-34B Hump 943 6.60 Front. 1920-21-22 34C-34D Hump 949 6.75	Front 1916-17-18 4-40 Ser. 18-4
Front. 1920-21-22. 34C-34D. Hump. 949. 6.75 L. Rear. 1916. 32B. Hump. 945. 8.10	Front1916-21 6 cyl years '16-'19
Rear 1917-18-19	Spec. Six & Big
Rear 1917-18-19 34-34B Touring	Six '20-'21Hump2315 9.0
& Coupe Hump . 944 9.30	Front 1918-19-20 Ser. 19 4 cyl 6 . 6
Rear1920-21-2234C-34D Roadster.Hump950 8.25	Front 1920-21 Light Six EJ Hump . 2322 . 7.6
Rear1920-21-2234C-34D Touring	Rear1918-19-20 Ser. 19, 4 Cyl (with
& Coupe Hump 951 10.95	flange bushings). Hump2319 13.0
	Rear 1918-21 Ser. 19 EH, Special
	Six EH (with
OLDSMOBILE	flange bushings). Hump 2320 16.3 Rear 1918-19 Ser. 19 EG (with
Front 1916-19	flange bushings). Hump2321 18.40  Rear 1920-21 Light Six EJ Hump2323 10.90
Front 1917-21	Rear 1920-21 Big Six EG Hump 2324 16.4
Front 1919-22	10a1020 21
Front 1921-22	TITANIC TIRE TOOL
A. Rear . 1918-19	THAT THE TOOL
Rear. 1919-22 45B-46, 5 Pass Hump. 3509 16.65	
Rear. 1919-22	TITANIC
Rear. 1919-22 43B-40, 7 Fass Hump . 3512 . 14.55	
toditodi-abtoti-ir Toddingtampi	The most practical of tire tools made of non
of the last section of the last section in	The most practical of tire tools—made of new spring steel carefully tempered—approximate
OLDSMOBILE TRUCK	spring steel carefully tempered—approximate weight one pound. One end is blunt so that it
(Economy)	can be hammered upon, this being very desirable
The sound of The Parents To Plate Hump 3550 8 40	both on demountable and clincher tires.

		I AIGE-DE INO			
ront	.1916	6-36, 6-38 6-46	.Hump.	1913.	8.50
ront	.1916	6-46	.Hump.	1914.	9.50
ront .	1917-20	6-39	Hump	1916	8 10
ront	1917-21	6-51, 6-55	Hump	1915	11 25
ront	1920-21-22	6-42, 6-44	Hump	1018	10 20
ront	1021-22	6.66	Hump.	1021	19.75
Page	1016.20	6-66 6-36, 6-38, 6-39 6-42, 6-44 Tour.	Polt.	1019	10.70
loor.	1020 21 22	6 42 6 44 Tour	Human	1010	92 70
lear	1021 22	6-66 Touring	. Hump	1919	23.70
war	. 1921-22	0-00 Touring	. nump	1920	20.70
ront	1916-22	Fifth-T-M-TS	Hump	2213	8 25
ront	1915-19	Sixth	Hump	2250	9 60
Rear	-1013-17	Sixth Fifth	Hump	2207	0.60
Poor	1015-10	Sixth	Rolt.	2201	10 20
lear	1018-10	Fifth-T-M-TS, Ser		2212	10.50
teal	. 1310-13	Filti-1-M-15, Sei	U	9914	15 45
	1000	ATS, Series B	. nump	2214	10.45
tear	. 1922	18, Series B	Hump	2215	16.20
	ILLAC	REO TRUCK			
		(Speedwagon)F 9Plate Regular F 9 Plate Regular			
Sure I		(Speedwagon)			1000
ront	.1917-21	F 9Plate Regular.	.Hump	2250	9.60
tear	.1917-21	F 9 PlateRegular.	.Hump	2251	13.05
		STUDEBAKER	,		
ront	.1916-17-18	4-40 Ser. 18-4	.Hump	2312	8.70
ront	.1916-21	6 cyl years '16-'19	9		
		Spec. Six & Big	3		
		Six '20-'21	.Hump	2315	9.00
ront	.1918-19-20.	Spec. Six & Bit Six '20-'21 Ser. 19 4 cyl	.Hump	2318	6.60
ront	.1920-21	Light Six EJ	.Hump	2322	7.65
ear	. 1918-19-20.	Ser. 19. 4 Cvl (with	1		
		flange bushings) Ser. 19 EH, Specia	Hump	2319	13.00
ear	1918-21	Ser. 19 EH. Specia	1		
alel I		Six EH (with	1		
		flanga hughinga)	Humn	2320	16 30
ear	1918-19	Ser. 19 EG (with	1	-0-0	10.00
		flange bushings)	Hump	2321	18 40
ear	1920-21	flange bushings)Light Six EJ	Hump	2323	10.45
ear	1920-21	Big Six EG	Hump	2324	16 45
				-021	10.10
TITANIC TIRE TOOL					
		TAME I	OOL		
	-				

both on demountable and clincher tires.

List Price......40c each

Front...1919-20-21..... T Regular 7 plate . Hump .. 3550... 8.40 Rear....1919-20-21..... T Regular 10 plate. Hump. . 3551... 20.70



The No. 102 spring illustrated above is the famous Tuthill Titanic Patented Unbreakable Hump Center spring which is guaranteed forever against center breakage, also for one year against breakage or sagging at any point. It is a well known fact that nine out of ten breakages occur at the center because of weakening bolt holes or nibs.

NOTE: Titanic front springs for Ford fit both double and single spring clip models.

### TITANIC QUALITY REAR SPRINGS FOR FORDS

The rear springs shown below are not made with the Titanic Patented Hump Center but a very fine quality of steel is used, carefully tempered and tested. They are guaranteed for one year against breakage or sagging at any point.



336 P. C. In lots of 10 or more, 402 P. C.

# TUTHILL EQUIPMENT



Equipment Springs are made of high carbon

	DUICK	T 2-4
T TT	BUICK	List
Location Year	BUICK Model Stock No. . D45, D47 5260 3. D34-35, E34-35.5266	Price
Front1916-17	D45, D475260	.\$ 8.55
Front1916-17-18	8. D34-35, E34-35.5266	. 6.00
Front1918-19-20	J. E. H. and K	
	44-45-46-47 5275	10.35
Front 1918-19-20	0. E49-50, H49-50, K49-50	
110001010 10 20	K49-50 5279	11 25
Front 1021 22	21 44 21 45	. 11.20
Front1921-22	21-14, 21-40,	10 50
F	22-44, 22-455281	. 10.50
Front1921-22	21-46,48,49,50,	
	22-46,48,49,50,.5283	. 11.10
Front1922	22-34, 22-35,	
	22-36, 22-375284	6.30
Rear 1916-17-18	3. D45-D47-E45. 5261	. 17.85
Rear 1922	21-44, 21-45, 22-44, 22-455281 .21-46,48,49,50, .22-46,48,49,50, .5283 .22-34, 22-35, .22-36, 22-37 5284 3. D45-D47-E455261 .22-34, 22-36 5286	12 15
10001		
	CADILLAC55-57-59 5331	
Front1917-21	55-57-595331	. 11.70
	CHALMERS	
Front1917-21	35B, 35C, 6-305525	7.50
Rear 1916-21	35A, 35B, 35C.	
	35A, 35B, 35C, 6-30	12 75
Harry Harry St.	6-305524 CHANDLER All Models6655	
	CHANDLER	
Front1917-22	All Models 6655	. 10.65
Rear1917-22	. Touring	. 16.50
7	HEVROLET	0.00
Front1917-18-19	490	6.00
Front1920-21	.4905842	5.70
Front1918-21	490	8.10
Rear1916-19	. 490 5833	8.55
Rear 1920-21	490 Touring 5844	8 85
Dear 1019 91	.FA-FB Touring 5839	12.75
	DODGE . All Models 6150	
Front 1915-22	All Models 6150	5.70
I Poor 1015-20	Touring	8.85
L. Real 1915-20	Dood & Course 6157	7 25
L. Rear 1915-20	Road & Coupe. 0137	7.35
U. Rear 1915-20	. 1r., Rd., Coupe. 6152	3.30
L. Rear 1921-22	.Touring6153	8.70
DO	DGE TRUCK	
Front 1017-99	.Commercial6175 .Commercial6176	6 45
Prode1917-22	Commercial 6176	10.90
Rear1917-22	.Commercial0170	10.00
	DORT	
Front 1017 20	.All Models6452 .All Models6454	8 40
Front1917-20	All Models 6454	8 40
Front1921	.All Models6454	0.40
	ESSEX .A	
Front1919-22	.A	6.60
Rear 1919-22.	A Tr. & Sedan 8703	12.75
	FORD	
Front All Years	.T-7 plate for P	rices
		equest
FrontAll Years	T-9 plate for	-4
FlourAn Tears	Delivery Care	
	Tourses Cars,	
	Trucks,	0 00
A SELVETORS	Taxis, etc5108	6.30
RearAll Years	.T-8 plate, for Program Tour. & Road. 5105 on r	rices
	Tour. & Road 5105 on r	equest
Rear All Years	T-9 plate rec-	
	ommended for Sedans .5115	15.45
RearAll Years	T-10 plate for	
Tout		
	Delivery Cars,	17 00
D	Taxis, etc5113	0.10
RearAll Years	.1 Ton Truck5114	8.10
	and the second second second	

		HIDCON		Tint
		Model 7-0	~	List
Locatio	on Year	Model	Stock No.	Price
Front.	1919	7-0	5634	.\$ 9.30
Front	1020-21-2	2 10.0 12.0	5637	9 45
TIONU.				
		HUPMOBILE		
Front	1010 20	R	5710	6 00
Pront.	1919-20.			0.30
Front.	1921	R	5722	6.30
Rear	1915-16-1	R. 7K-N	5713	. 11.55
Rear	1918-20	R	5720	11 40
		LIBERTY		
Front	1016 91	10A-10B-10C	0000	9 95
Pront.	1910-21	10A-10B-10C	0900	10.00
Rear	1916-20	10A-10B-Tot	ır8901	10.35
		MANUELL		
-		MAXWELL		
Front.	1914-19	25	6523	5.10
Front.	1920-21	. 25	6528	6.60
Rear	1018-10-20	025 Touring.	6527	0 45
iteai	1310-13-20	20 Touring.		3.40
		NASH		8.4
Frant	1010 01	All C C-1 Ma	1 0000	11 70
Front.	1918-21	All 6 Cyl. Mo	a 6003	11.70
Front.	1921	4	6008	8.85
		01111		
		OAKLAND		
Front.	1917-18-19	34-34R	5043	6.60
Front	1920-21-29	34C-34D	5040	6 75
Deer.	1010 10	24D T		0.70
Rear	1918-19	2 .34C-34D 34B Tour 2 .34C-34D Tou	5944	9.30
Rear	1920-21-22	2 .34C-34D Tou	ır. 5951	10.95
	O	LDSMOBILE		
Front.	1916-19	43.8-44.45.45.	A .8500	7.20
Front	1917-21	43,8-44,45,45 37-37A	8503	6 60
Front	1010 22	AED AC	0507	10.00
Front.	1919-22	45B-46	8507	10.80
Front.	1921-22	43A-47 37-37A Tour . 45B-46, 5 Pass	8511	8.10
Rear.	1917-21	37-37A Tour	8504	14 25
Reer	1010-22	ASRAR 5 Page	8500	16 65
D.	1010 00	45D-40, 5 F as	00009	10.00
Rear	1919-22	45B, 46, 7 Pas	8.8508	18.30
Rear	1921-22	43A-47 Tour.	8512	14.55
	OLDS	MOBILE TRU	CK	
Front	1919-20-21	Economy 3/1	8550	8.40
Reer	1010-20-21	Economy 34 T Economy 34 T	8551	20 70
rtear				20.70
	(	OVERLAND		
Duant	1017 10 10	90	E441	6.75
Гини	1917-10-19			
Front	1920-21	Light 4	5444	4.80
Front	1920-21	. 20 . (Willys-Knight)	).5446	7.05
Rear	1916-19	75-75B, 90 Tour	o 5442	1 25
Poor	1020 21	Ti-ba	EAAE	6 00
near	1920-21	.Light 4		0.00
	DAI	GE-DETROIT		
Th 4	1017 00	GL-DL IKOII	0010	0 10
Front	1917-20	. 0-39		8.10
Front	1920-21-22	. 6-39	. 6918	10.20
	****	REO .Fifth-T-M-TS		
Front	1915-22	.Fifth-T-M-TS	7213	8.25
Rear	1918-21	.Fifth-T-M-TS		
		Series A	7214 1	5 A5
	_	Deries II	1	0.40
	R	EO TRUCK		
Front.	. 1917-21	.F-Speedwagon	7250	9.60 .
Reer	1017-21	.F-Speedwagon	7251 1	3 05
Attal				0.00
	ST	UDEBAKER		
Front		Cyl., 1916-19,		
110110			7015	0.00
	Spe	c. & Big Six, 1920-21	. 7315	9.00
Front	1918-19-20.	. Series 19, 4 Cyl	.7318	6.60
Front.	. 1920-21	.Light Six EJ	.7322	7.65
Rear	1018.91	Series 19 EH,		
recai	1910-21	Corres 19 Eri,	7000	0.00
-		Special 6 EH	.7320 1	6.30
Rear	1920-21	.Light Six EJ	.7323 1	0.95
100000000000000000000000000000000000000				

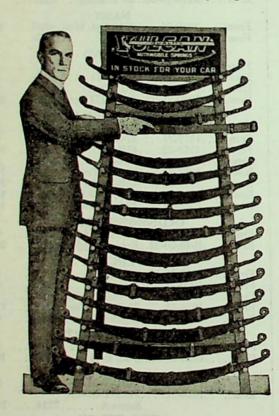
# When Springs Break

put on



## The key note of business success is Service.

See our discount sheet for special proposition covering an assorted order of VULCAN springs with this useful display rack free.



VULCAN springs are known throughout the world for their high and uniform quality. Each VULCAN spring is made an exact duplicate in shape and design of the spring it is intended to replace, but is always of superior Cars with broken quality. springs that are replaced with genuine VULCAN springs, are wonderfully improved as to riding quality and dependability. Each VULCAN spring is oil tempered and carefully heat treated, and painted with good black paint, and the VULCAN metal name plate is shown at the center of the spring.

We positively carry in stock all numbers listed on the opposite page.

# Free Display Rack CAPACITY 64 SPRINGS

We furnish this display rack free with an order of 25 assorted springs.

Price of rack alone \$7.50.

When Springs Break, Put on



In Every Town For Every Car

# Passenger Car Springs

ALLEN	BUICK—Continued
No Model Les With Leth Wine Code Price	No. Model Los With Lost Wine Code Price
No. Model Loc. Wdh. Lgth. Wire Code Price	No. Model Loc. Wdb. Lgth. Wire Code Price
1325 37-1916-'17 F 134 3338 Abdicate \$5.60 1326 37-1916-'17 R 2 5314 Ability 15.50	1130 C-37-1915 F 2 371/4 Adore 8.50
1320 37-1310-17 R 2 3074 Ability 13.50	1142 C-37-1915L.R. 21/4 441/2 Alarm 11.50
1327 41-1918-19. F 134 3334 Abeam 5.60 1328 41-1918-19. R 2 5234 Abide 13.60	1148 D-55, C-55, 1915-16 F 21/4 40 Arab 11.40
	1151 D-55, C-55, 1915-16
1330 43-1920-All R 2 5336 Able 13.10	17
1331 43-1921-All F 134 355 Abaft 6.80 1332 43-1921-All R 2 525 Abated 13.70	1145 D-45-Little Six '16- '17 F 2 35½ Auction 8.80
1332 43-1921-All R 2 52% Abated 13.70	17
ANDEDCON	'17 R 21/4 451/4 Apex 18.10
ANDERSON	
1375 400-A.C.D. E. G F 2 351/4 Askew 6.90	1155 D and E-44-46. R 234 4514 Apology. 18.30 1152 D and E-34-35. F 134 3334 Albambra. 6.00 1153 D-35, 1917, 4 Cyl R 2 4614 Alimony. 9.70
1376 400-A. C. D. E. G. R. 2 5334 Aslant 14.40	1152 D and E-34-35 F 134 331/2 Alhambra 6.00
1377 30-A. B. C. D. E. F. F. 24 35 Abode 9.10	1153 D-35, 1917, 4 Cyl R 2 4614 Alimony 9.70
1378 30-A. B. C. D. E. F. R 214 55 Abolish 17 00 1379 8-40-1921-All F 214 355 Abridge 7.80	1104 D-04, 1911, 4 Cyl R 2 1074 Alkaloid 7.10
1379 S-40-1921-All F 2½ 355 Abridge 7.80 1380 S-40-1921-All R 2½ 55¾ Abrupt 16.50	1156 E-49-1918 F 2 35 Albus 10.90
1000 C-10-1001-Mi 10 2/4 00/8 Mitape 10.00	1158 E-34 4 Cvl R 2 5034 Alum 9.70
APPERSON	1159 E-35, 4 Cvl R 2 50½ Alumni 12.00
	1156 E-49-1918. F 2 35 Albus. 10.90 1157 E-49-1918. R 2½ 45 Altrus. 23.80 1158 E-34, 4 Cyl. R 2 5034 Alum. 9.70 1159 E-35, 4 Cyl. R 2 5034 Alum. 12.00 1160 E-44-45-46-1918. F 2 3534 Ambrose. 18.60 1162 H-44-45-46-47-'19. F 2 3534 Amateur. 10.30 1163 H-45-1919. R 2½ 47 Ambush. 22.10 1164 H-44-46-1919. R 2½ 474 Amendable. 19.40
1350 6-48, 8-58-'16 to '18 F 134 33 Abundant 7, 40 1351 6-48, 8-48, '16 to '18 L.R. 2 45½ Acclimate 10.80 1352 8-20, 1920-All F 134 32½ Acting 6.30	1161 E-45-1918 R 2½ 45¼ Ambrose 18.60
1352 8-20, 1920-All F 134 3214 Acting 6.30	1162 H-44-45-46-47-'19. F 2 357/8 Amateur 10.30
1353 8-20, 1920-All R 2 4414 Actually 12.00	1163 H-45-1919 R 2½ 47 Ambush 22.10
1354 8-1919 F 134 3314 Allot 6.40	1104 H-41-40-1919 R 2/2 47/2 Amendable 19.40
1354 8-1919. F 134 33½ Allot. 6.40 1355 8-1919. U.R. 2 19½ Affuse. 6.50	1166 H-49-50-1919 R 214 4714 Ammonia 26 80
1356 8-1919 L.R. 2 4478 Allspice 12.80	1167 K-44-45-46-47-'20 F 2 36 Ample 10.30
1357 8-1921-22 F 1% 32% Almanac 0.30	1162 H-44-45-46-47-'19 F 2 35½ Amateur. 10 30 1163 H-45-1919 R 2½ 47 Ambush. 22 10 1164 H-44-46-1919 R 2½ 47½ Amendable. 19 40 1165 H-49-50-1919 F 2 35½ Amid. 11 50 1166 H-49-50-1919 R 2½ 47¼ Ammonia. 26 80 1167 K-44-45-46-47-'20 F 2 36 Ample. 10 30 1163 K-45-47-1920 R 2½ 47 Ambush. 22 10 1164 K-44-1920 R 2½ 47 Ambush. 22 10
1358 8-1921-'22. U.R. 2 19½ Agog. 5.70 1359 8-1921-'22. L.R. 2 45¼ Aiding. 12.00	1164 K-44-1920 R 21/2 471/2 Amendable 19.40
1359 8-1921- 22	1168 K-46-1920 R 2½ 47½ Amuse 19.00
AUBURN	1163 K-49-47-1920. R 23-2 47 Amoustable. 19 40 1164 K-44-1920 R 23-4 473-2 Amoustable. 19 40 1165 K-49-50-1920. R 23-4 473-2 Amoust. 19 .00 1165 K-49-50-1920. R 23-4 473-4 Amoust. 15 0 1169 K-49-50-1920. R 23-4 463-4 Amount. 25 .10
1275 6-44, 1917; 6-39,	1162 H-44-45-46-47-'19 F 2 35½ Amateur. 10 30 1163 H-45-1919 R 2½ 47 Ambush. 22 10 1164 H-44-61919 F 2 35½ Amid. 11 50 1165 H-49-50-1919 F 2 35½ Amid. 11 50 1166 H-49-50-1919 R 2½ 47½ Amendable. 19 40 1167 K-44-45-46-47-'20 F 2 36 Ample. 10 30 1163 K-45-47-1920 R 2½ 47 Amendable. 19 40 1168 K-49-50-1920 R 2½ 47½ Amuse. 19 .00 1165 K-49-50-1920 F 2 35½ Amid. 11 50 1169 K-49-50-1920 R 2½ 46¾ Amount. 25 10 1170 K-44-46-48-49-50-1921 F 2 35¾ Amen. 11 30
1917-'21 F 2 35½ After 7.80	1921-'22 F 2 353/ Amen 11 30
1276 6-39, 1917-'21 R 2 531/4 Affront 13, 30	1171 K-44-46-1921-'22 R 214 4714 Ambition 18 60
1276 6-39, 1917-'21 R 2 53½ Affront 13.30 1277 6-44, 1917 R 2½ 51½ Afar 22.00	1172 K-45-1921-'22 F 2 361/8 Amidst 10.50
	1921-'22 F 2 35¾ Amen. 11.30 1171 K-44-46-1921-'22 R 2½ 47¾ Ambition. 18.60 1172 K-45-1921-'22 F 2 36¼ Amidst. 10.50 1173 K-45-1921-'22 R 2 47¼ Amiss. 21.00
BRISCOE	1174 K-47-1921-'22 F 2 351/2 Amity 9.50
1252 1916 F 13/ 313/ Almaca 4 90	1174 K-47-1921-'22 F 2 35½ Amity 9 50 1175 K-47-48-1921-'22 R 2½ 46½ Amnesty 20.40 1176 K-49-50-1921-'22 R 2½ 47½ Amongst 24.00
1253 1916. R 134 4134 Alcade 13 20	1176 K-49-50-1921-'22 R 21/2 471/8 Amongst 24.00
1254 4-24, '17-'19, 5 leaf. F 134 2812 Alfalfa 8.70	CADULAC
1252 1916 F 134 3134 Alpaca 4.90 1253 1916 R 134 4134 Alcade. 13.20 1254 4-24, '17-'19, 5 leaf, F 134 2834 Alfalfa. 8.70 1255 4-24, '17-'19, 6 leaf, R 134 32 Allegory 11.20 1258 4-34, 1920-'21-All F 134 3534 Allegro 7.10	CADILLAC
1258 4-34, 1920-'21-All. F 134 3534 Allegro 7.10	1202 30-Up to 1911 R.C. 2 37 Banish 7.80
1259 4-34, 1920-21, 1rg.	1204 30-1911 R.S. 2 42 Baron 10.80
and Rd	1205 30-1911
1200 4-54, 1920- 21, Sed. R 174 5178 Albeit 12.50	1207 30-1912 R.S. 2 42 Beaver 11.30
BUICK	
1100 10-26-27-32-33-34-	1911 20 1012 DC 9 3712 Black 11 20
35-36 F 1½ 35 Absent 6.20	1219 30-1913
1101 10-26-27-32-33-34-	1213 30-1914 R.S. 2 5112 Bonus 15.60
25-26 I. P. 13/ 275/ Absolve 9 00	1214 30-1914
35-36. L.R. 134 375% Absolve 8.00 1102 10-26-27-32-33-34-	1215 51-53-1915-16 F 2 41 Border 11.40
35 U.R. 134 38 Abstain 6.80	1216 51-53-1915-'16 R.S. 2 52 Borrow 16.50
1108 28-29-30-31 F 2 34% Acclaim 7.80	1217 51-53-1915-'16R.C. 2 38 Bosom 10.70
1117 24-25 1012 F 11/ 25 Acquit 5 40	1222 55-1917-7 Pass F 2 4114 Baggage 12.30 1223 55-1917-7 Pass R.S. 2 5134 Balliff 15.90
1120 25-1013 I. R 137 4016 Adage 8 50	1222 55-1917-7 Pass F 2 4114 Baggage 12, 30 1223 55-1917-7 Pass R.S. 2 5134 Balliff 15 90 1224 55-1917-7 Pass R.C. 2 3834 Balcony 10 60 1222 57-59-1918-20 F 2 4114 Baggage 12, 30 1223 57-59-1918-20 R.S. 2 5134 Balliff 15 90
1122 40-1913 F 2 3514 Addle 7.80	1222 57-59-1918-'20 F 2 411 Baggagg 12 30
1125 B-24-25-1914 F 2 351/4 Adjourn 6.90	1222 57-59-1918-'20 F 2 411 Baggage 12.30 1223 57-59-1918-'20 R.S. 2 5134 Bailiff 15.90
1126 B-24-1914L.R. 2 4034 Adjudge 7.90	1224 57-59-1918-'20R.C. 2 3814 Balcony 10.60
1128 B-25-1914 L.R. 2 4034 Admire 8.40	1225 59-1921-'22 R.F. 2 413/8 Barracks 12.20
1130 B-36-37-38-1914 . F 2 3714 Adore 8.50	1226 59-1921-'22L.F. 2 413 Basely 12.20
1131 B-36-38-1914 L.R. 234 44 Adritt 9.60	1227 59-1921-22 Phae.,
1133 B-37-1914 L.R. 254 44 Allect 10.50	Rd. and Vic R.S. 2 51% Bashful 14.10
1135 R-55-1014 F 217 3837 Agrica 10 50	Rd. and Vic R.C. 2 38 Bassoon 8.90
1137 B-55-1914 U.R. 216 23 Agree 10.40	Rd. and Vic R.C. 2 38 Bassoon 8.90 1229 59-1921-'22-All but
1138 C-24-25-1915 F 2 351/4 Ajax 7.00	Phae., Rd. & VicR.S. 2 51% Baroness 15.50
1149 C-24-1915L.R. 2 4434 Apollo 9.00	1230 59-1921-'22-All but
1102 10-26-27-32-33-34   38	Phae., Rd. & VicR.C. 2 3814 Base 10.80

To make your wants clear to us, order by Stock Number. When ordering by wire, use the Code Word, for example: "Express two Vulcan Judge, one Joy."

Our experience shows that the Springs listed in bold type are generally the best sellers.



In Every Town For Every Car

## Passenger Car Springs

	0		
CHALME		COLUMBIA	
No. Model Loc. Wdh	List Price	No. Model Loc. Wdh. Lgth. Wire Code	List Price
1400 00 F 1010 M 1011 P 0		1625 1917-21-All F 13/ 371/6 Expel	9.90
1402 30-K 1910, M-1911. F 2 1405 40	37 Dilute 9.00	1625 1917-21-All F 134 37½ Expel 1626 1917-21-All but Sd. R 2½ 47¼ Expose	21.70
1402 30-K 1910, 31-1911. F 1402 36 Model 10-'12, 17-'13 F 1410 18-1913 6 Cyl F 1411 24-29, '14-'15-'16. F 1414 24-29, '14-'15-'16. LR. 2\frac{1}{4} 1415 24-29, '14-'15-'16. LR. 2\frac{1}{4} 1416 26-1915. F 1417 26-26B 1915. LR. 2 1418 26-26B 1915. LR. 2 1418 26-26B 1915. LR. 2 1418 23-32B 1915-16. F 142 32-32B 1915-16. F	271 / D-f 8 70	1627 1917-21—Sedan R 21/4 473/8 Explode 2	25.30
1410 18-1913 6 Cvl F 21/	37 Ditty 10 70	CROW-ELKHART	
1413 24-29, '14-'15-'16 F 2	371/2 Drench 9.30		
1414 24-29, '14' 15-'16 L.R. 214	4834 Dress 15.30	1653 30-32-33-35, '16 to '18	8 50
1416 26-1915. F 134	35 Dune 9 50	1654 30-32-33-35, '16 to	0.00
1417 26-26B 1915 L.R. 2	44½ Dwell 10.20	'18L.R. 134 42 Fathom	7.20
1418 26-26B 1915U.R. 2	19 Dwarf 6.60	1655 30-32-33-35, '16 to II P 13/ 10 Fatigue	4 70
1420 35A-6-30 1916 F 134	3716 Design 7 70	1656 K-36-1918-'20 F 2 3536 Federal	8.30
1421 35ABC-6-30-AIL L.R. 2	5134 Diamond 13.30	18. F 134 334 Fashion  1654 30-32-33-35, '16 to  18. L.R. 134 42 Fathom  1655 30-32-33-35, '16 to  '18. U.R. 134 19 Fatigue  1656 K-36-1918-'20 F 2 35½ Federal  1657 K-36-1918-'20 R 2 4934 Flesh 1	11.70
1423 32 A-6-40 Cant R 21/2	5114 Democrat 17.90		
1425 35B-35C-6-30 '17	55 Dental 14.70	DAVIS	
1423 32-305 1915-16. F 134 1420 35A-6-30 1916. F 134 1420 35A-6-30-All. L.R. 2 1421 35ABC-6-30-All. L.R. 2 1423 32 A-6-40 Cant. R 234 1424 32B-6-40. R 2 1425 35B-35C-6-30 '17' to 22. F 134	37½ Dentist 7.10	1810 1919-1920 F 2 38 Exist	9.90
		DETROITER	
CHANDL	ER		7 50
3050 Six-1915-16 F 2	39¼ Earth 8.60	1600 A, B, C and D F 13/4 361/2 Fagot	1.00
		1605 HS-70-1919-21-All F 1½ 35½ Excite 1606 HS-70-1919-21-All U.R. 2 24½ Exclaim 1607 HS-70-1919-21-All L.R. 2 48½ Exclude 1	7.10
3052 Six-1915-16U.R. 2	15% Ebony 4.90	1606 HS-70-1919-21-All U.R. 2 241/8 Exclaim	6.30
3054 1917-'18-'19. Tr R 2	5416 Epulet 16 40	1007 HS-70-1919-21-All L.R. 2 4872 Exclude 1	12.00
3051 Six-1915-16 U.R. 2 3052 Six-1915-16 U.R. 2 3053 1917-18-19 F 2 3054 1917-18-19, Tr. R 2 3055 1917-18-19, Rd R 2 3056 1918-19 Dispatch. F 2 3057 1918-19 Dispatch. R 2 3058 New Series-1920 Tr	1534 Ebony. 4, 90 3932 Entry. 10, 10 5432 Equator. 11, 90 3934 Edify. 11, 00 53 Elder. 12, 90	DODGE	
3056 1918-19 Dispatch. F 2	39¾ Edify 11.00		
3058 New Series-1920 Tr	55 Edder 12.90	1550 1915-'22 Tr., Rd., Sedan	6.00
and Itu F 2	391/2 Extend 10.20	1551 1915-1920 Tr L.R. 2 4134 Fasten 1	0.00
3059 New Series-1920 Tr R 2 3060 1921-'22-All models F 2	53¾ Extract 15 60 39¾ Expire 11.20	1552 1915-1920 Tr. and Bd. U.B. 2 17 Fasting	3.90
3061 1921-'22-Dispatch		Rd. U.R. 2 17 Fasting 1558 1915-1920 Rd. L.R. 2 4134 Flame 1559 1921-'22 Tr L.R. 2 44 Fervent	8.10
and Coupe R 2 3062 1921-'22-Touring R 2 3063 1921-'22-Sedan and	53½ Expensive 12.70 53½ Extreme 16.20	Rd. U.R. 2 17 Fasting 1558 1915-1920 Rd. L.R. 2 4134 Flame 1559 1921-22 Tr., L.R. 2 44 Fervent 1560 1921-22 Tr., Rd. &	9.00
3063 1021-22-Touring R 2	53½ Extreme 16.20	Sedan U.R. 2 18 Festive	3.80
Lim R 2	54 Exultant 17.40	Sedan         U.R. 2         18         Festive           1562         1921-22 Rd         L.R. 2         44½ Fetch           1561         1921-22 Sedan         L.R. 2         43½ Fetlock         1	8.30
		1561 1921-'22 Sedan L.R. 2 43¼ Fetlock 1	10.10
CHEVROI	LET	Sedan. U.R. 2 18 Festive 1562 1921-22 Rd. L.R. 2 4414 Fetch 1561 1921-22 Sedan. L.R. 2 4314 Fetlock 1 1556 1915-22 Delivery. F 134 3514 Fantasy 1557 1915-22 Delivery. L.R. 2 4134 Flute 1	11.40
1500 H-2 H-4, 14to 17 F 134	351/ Flude 6 90	1556 1915-'22 Delivery. F 1¾ 35¼ Fantasy 1557 1915-'22 Delivery. L.R. 2 41¾ Flute 1 1555 1915-'22 Delivery. U.R. 2 17 Flirt	4.10
1501 H-2, 1914-17L.R. 134	4714 Embark 7.90	DORT	
1502 H-2, 1914-17U.R. 134	2214 Ensign 4.30		
1504 H-4, 1914-17 U.R. 134	21 Essay 5 10	1575 Four 1916-21 F 2 37 Favor 1576 Four 1916-21 R 2 48% Fertile 1	8.20
1505 1915 Little Six F 2	34% Estate 6.80	1576 Four 1910-21 R. 2 48% Fertile 1	14.10
1505 490-1916 top or bot. F 194	21½ Esteem 3.50	ELCAR	
1508 490-1917- 18, 8 leaf F 3	23 Equity 6.80	1710 4-6, 1918-19 F 2 3434 Frost	7.90
1509 490-1919, 8 leaf F 3	223/4 Etch 5.80	1710 4-6, 1918-19. F 2 3434 Frost	11.90
1511 D-1918 F 2	35 Etna 7 60	1712 5 Pass. 1920 F 2 34½ Fringe	7.90
1512 D-1918 R 21/4	34 Espy 14.80		4.10
1500 H-2, H-4, 14 to 17 F 12, 1501 H-2, 1914-17. LR. 13, 1502 H-2, 1914-17. LR. 13, 1502 H-4, 1914-17. LR. 13, 1504 H-4, 1914-17. LR. 13, 1504 H-4, 1914-17. LR. 13, 1505 1915 Little Six. F 2, 1506 490-1916 top or bot. F 13, 1508 490-1917-18, 8 leaf F 3, 1509 490-1917-18, 8 leaf F 3, 1510 490-1919. R 3, 1510 490-1919. R 3, 1511 D-1918. F 2, 1512 D-1918. R 23, 1513 FA, 1918, FB 1919-21. F 2	351/ Ferret 8 20	ELGIN	
1514 FA 1918, FB 1919-	35½ Erupt 8.30	1825 1916-17-Trg. F 134 3314 Factor 1826 1916-17-Trg. R 214 47 Faculty. 1 1827 1918-19-All, 6 lf. F 2 3514 Falsely. 1828 1918-19-All, 8 lf. R 214 46 Falsity. 1 1829 1919-21-All, 7 lf. F 2 3514 Facts	6.00
'21 R 214	34¾ Ergo 14.00	1826 1916-17-Trg R 21/4 47 Faculty 1	14.00
1514 FA 1918, FB 1919- '21	23½ Entitle 5.70	1828 1918-19-All, 8 lf R 21/4 46 Falsify	14.60
H-2 Baby Grand. I	I-4 Royal Mail.	1829 1919-21-All, 7 lf F 2 351/4 Facts	6.90
CLEVELA	IND	8 leaves R 21/4 483/8 Fairness 1 1831 1919-21-Sedan only	15.30
3400 Six-1920 F 2	3714 Enlarge 0 00	1831 1919-21-Sedan only 91 eaves R 2½ 483% Faithful 1827 and 1828 were used only in 1918 and early 19	16.50
3400 Six-1920 F 2 3401 Six-1920 R 2	49½ Enjoin 12.10	1827 and 1828 were used only in 1918 and early 19	919
		productuon.	
COLE		EMPIRE	
1468 8-70 1919 F 2½ 1469 8-70 1919 R 2½	383/4 Enforce 11.70	5052 33-1916. F 134 36½ Granite 5056 6-60-1916-18. F 134 36½ Gravy	6.80
1469 8-70 1919 R 2½	543/8 Engage 20.90	5056 6-60-1916-18 F 134 361/2 Gravy	7.30

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In Every Town For Every Car

## Passenger Car Springs

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	EMI	PIRE	-Con	tinue	1			HUD	SON-	-Cont	inue	d	
No	Model	Too	Will	T -th	Wiss Cade	List	N					m. 0 1	List
5050	50 51 704 1017 116	,		Lgtn	. Wire Code	Price	No. M					Wire Code	
3039	50-51-70A, 1917-'18 '19 50-1917-'18-'19 70A-1917-'18-'19	F	2	36	Grove	7 50	2117 6-	40-1914-'15 54-1914-'15 40-1915 40-1914-'15. Rd	ER S	2 5	23/4	Loat	13.80
5060	50-1917-'18-'19	R	2	501/2	Grove Guard Guest	14.50	2122 6-	40-1915	F	274 0	181	Loving	8 90
5061	70A-1917-'18-'19	R	2	501/4	Guest	14.20	2125 6-	40-1915. 40-1914-'15, Rd	L.R. 2	5	2	Lucily	11.10
			M. F.				2127 6-	40-1916	F 2	3	185/8	Lucily Lunar	11.60
100	Transfer (						2128 31	uper Six, 1916 to		21/ 3	201/	Luxury	10 70
1700	30-1909-'10-'11	F	2	361/2	Gallop Glove	7.00	2130 Su	uper Six. Rd. 1916		-74	00%	Luxury	10.70
1705	30-1912, Fore Door	U.R	. 2	38/2	Glove	8.40	1	uper Six, Rd. 1916 21	R 2	1/4 5	41/2	Lustily	11.90
		E	SSEX				2131 Su	uper Six, 1916-'22		11/ 1		T	10 00
1875	A-1919-'22-All	F	2	3514	Gulf	6 20		S leaf uper Six, 1916-'22	R 2	74 0	00	Lugger	10.20
1876	A-1919-'22-All but						9	No. 2132 sup	R 2	21/4 5	6	Lustral	18.30
	Sedan	R	2	521/2	Guide	11.70		No. 2132 sup	ersede	es our	form	er No. 2129	
			ORD					н	UPM	ORILE	-		
2000	T-Made only in 7		Onb				0001 00						- 00
2000	leaf, 18 lb. type for						2201 20	0-Rd. Std. Trd 2-1913-'14 2-'12 to '14 Std. Trd	F 1	3/ 3	314	Major	6.30
	2 or 5 pass	F	11/2	311/8	Joy		2208 32	2-'12 to '14 Std.		74 0	072	Molal	0.00
2001	T-56" Standard tro 8 leaf, 42 lb. type.	D	2	44	ludas		T	rd. 2-'12 to '14 Sou.	R 2	4	3	Moral	12.00
2002	T-60"or wide gauge	n	4	44	Judge		2209 32	- 12 to 19 Soul					
	for Southern Stes						2210 32	Frd. 2-All Models	Aux 2	. 2	616	Muse Mutual	1 60
0004	use up to 1917 T-9 leaf for bus, de-	R	2	49	Jungle	18.40	2211 5-	Pass. K. 15 N-16					
2004	livery cars con-						2212 5	17 Pass. K-'15 N-'16	F 1	3/4 3	61/2	Muzzle	7.50
	livery cars, con- verted Trucks and	1					,	17	R 2	5	0	Mystic	12 10
	FORG I FUCKS	r	11/2	311/8	Joyful		2213 N-	-7 Pass'16, '17 -7 Pass'16, '17 -1918-'19-'20, 5	Fi	3/4 3	81/2	Mystic Moist Moidy	8.70
2005	T-10 leaf for bus or delivery cars, etc.		2	44	Judging		2214 N-	-7 Pass'16, '17.	R 2	5	634	Moidy	17.10
2006	T-60" or wide gaug	e	-	44	Judging		2215 H-	-1918-19-20, 5	F 1	34 3	51/	Monitor	5 60
	for bus, delivery cars, etc., 10 leaf				Total deposit		2216 R-	eaf, Nib. -1918-'19 Nib. -1918-'19-'20, 6	R 2	4	93/	Monitor Mutilate	11.90
2000	cars, etc., 10 leaf	R	2	49	Juniper	20.80	2217 R-	1918-'19-'20, 6					
2008	Ton Truck-Regular Ford Truck	R	3	17	Jipsum	8 60	2210 B	eaf, Nib	F 1	3/4 3	51/4	Muddy	7.00
2009	Special 9 leaf rear for Ford Sedan						2210 H-	eaf. Nib.	F 1	3/ 3	51/	Muscle	7 60
	for Ford Sedan	R	2	44	Jersey		2220 R-	eaf, Nib -1920 Nib -1920-'21-Bolt	R	2 4	9	Muscle Magazine	11.40
		GAF	DNE	3 .			2221 R-	-1920-'21-Bolt	F 1	3/ 2	51/ 1	Moneter	6 60
2450					Claha	0 20	2222 R-	ype -1920-'21 Bolt		74 3	3)2	Wionster	0.00
3451	1921-'22-All 1921-'22-All	R	134	493/	Gloom.	10.80	ty	ype	R 2	4	9	Moody	11.10
									TERS			and the same	
		100	RANT				9956 10					Markin	7 00
1950	K-1916-1919	F	11/2	333/8	Juvenile	5 40	2257 19	15 to 1919 I 15 to 1919 I	.R. 2	4	23/	Mohair	9.10
1951	K-1916-1919 G-1918-1919	R	13/	3/1/4	Justice	6.50					-		
1953	K-1916-1919 K-1916-1919 G-1918-1919 G-1918-1919	R	2	451/4	Jostline	12.00			JORD				
1954	H-1920- 21 1r. and						3700 Mc	odel F-1920-21.	F 2	3	01/2	Misty	8.50
	Kd	B.	2	371/2	Jesuit	9.00	3702 Mc	odel M—1921	F 2	3	6	Moment	7.50
1956	H-1920-'21 Rd H-1920-'21 Tr	R	2	5334	Jesuit Jostle Justly	13.30	3703 Mc	odel F—1920-21. odel F—1920-21. odel M—1921 odel M—1921	R 2	5	3 1	Misty Misuse Moment Mission	14.40
									KIN				
		HA	YNES				4200 D	1015.16	E 3	3/	81.6 7	Memory	10 10
3158	Light Six, 30-33-34	-			TI-I III		4201 D-	1915-'16. 1915-'16. 1916-'17 3-1918-'19.	R 2	1/2 41	1 1	Manly	16.40
3150	35-'15-'16. Light Six, 30-1915-	F			Jasper		4202 E-1	1916-'17	F 2	36	31/4	Manly. Measure Madly. Magnate	9.50
3103	16	R	2	503/4	Jaunt	12.00	4204 EE	S-1918-19	F 2	14 46	294	Madly	20. 20
3160	'16. 36-37-40-41, '16-'17 36-37-40-41, '16-'17 34-35.	F	2	371/2	Jocular	9.40	1200 111	2-1010-10	,	2 1	. 27	Tagnate	20.50
3161	36-37-40-41, 16-17	R	2	5114	Javelin	13.90			SSEL				
3162	48-1920, All	F	21/4	385%	Jaunt Jocular Javelin. Journal. Jalap Jesting. Itself Item	12.20	4250 4-3	2-1916	F 2	35	1/2 1	fetal	7.70
3163	48-1920, All	R	21/4	55	Jesting	17.10	4251 4-3	32-1916L	R. 2	4 40	/4	Midly	12.90
3164	48-1920, All 48-1920, All 47-1920-'21, All 47-1920-'21, All	F	214	3834	Itself	11.10	4253 100	0 pt. Six-'16-'17	F 2	4 35	16 N	dember	7.90
3105	47-1920- 21, All	11	274	00/2	теш	10.70	4254 100	32-1916. L 32-1916. L 32-1916. U 32-1916. U 3 pt. Six-'16-'17. L 320-All	.R. 23	4 49	1/2 N	daxim	12.90
		HUI	DSON				4255 6-1	920-All 920, 2 Pass. Spd 920, Tr. and Sd 21-All.	F 2	35	72 N	Mellow	8.30
2104	33_1011	I. R	2	4616	Latch	9.30	4256 6-1	920, 2 Pass. Spd 920, Tr and Sd	R 21	49	12 1	fention	11.10
2106	33-'12, 37-'13.	F	2	36	Laugh	7.80	4258 192	21-All	F 2	37	56 N	futiny	9.30
2116	33-1911 33-'12, 37-'13 6-40-1914	F	2	38	Laugh Lizard	9.10	4259 192	21-All	R 23	4 55	% N	dention	17.10

To make your wants clear to us, order by Stock Number. When ordering by wire, use the Code Word, for example: "Express two Vulcan Judge, one Joy."

Our experience shows that the Springs listed in bold type are generally the best sellers.

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No. 2000. Each...1504 In lots of 20 or more. Each...1358

No. 2001. Each...5507 In lots of 20 or more. Each...5003

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No. 2005. Each...8659 In lots of 20 or more. Each...8004



In Every Town For Every Car

## Passenger Car Springs

LEXINGTON	OAKLAND—Continued
List	List Division of Division of the Division of t
No. Model Loc. Wdh. Lgth. Wire Code Price	No. Model Loc. Wdh. Lgth. Wire Code Price
5025 R-1919 F 2 361/2 Lair 8.40	2441 34B-Rd., 1918-19. R 134 4914 Otterman 10.00
5026 R-1919 L.R. 234 5332 Lapse 16.10	2441 34B-Rd., 1918-'19 R 134 49½ Otterman 10.00 2442 34C, 1920-'22 Tr F 134 35½ Outstrip 6.90 2443 34C, 1920-'22 Tr
5025 R-1919     F     2     361½ Lair.     8.40       5026 R-1919     LR. 2½ 53½ Lapse.     16.10       5027 S-1920-21-All.     F     2     31¾ Labor.     6.60       5028 S-1920-21-All.     R     2     50 Lackey.     12.20	and Coupe. R 134 4914 Oxidate 11.20
5028 S-1920-21-All R 2 50 Lackey 12.20	2444 34C 1920-22 Rd F 134 34% Openiv D.DU
LIBERTY	2445 34C, 1920, Rd R 134 4958 Opulent 9 . 90
	2445 34C, 1920, Rd. R 13/4 49% Opulent 9.90 2446 34C, 1920-'22 Sd. R 13/4 49/4 Omission 13.40 2447 34C, 1921-'22 Rd. R 13/4 49% Offspring. 8.30
3125 10A-10B-1919-'20. F 134 37/8 Mortal 7.90 3126 10A-10B-1919-'20 R 2 47/2 Mortify 10.50 3127 10C-1920-'22-All F 134 37/2 Mother 9.00	2447 34C, 1921-'22 Rd R 134 495 Offspring 8.30
3126 10A-10B-1919-20 R 2 47½ Mortity 10.50	
3128 10C-1920-22-All. R 2 48 Mourn. 11.40	OLDSMOBILE
3123 100-1920-22-AIL R 2 45 MOURT 11.40	
MAXWELL	4052 43-1916     F     2     35½ Omnibus     7.40       4053 43-1916     L.R. 2     45½ Offset     11.40       4050 8-44-45, '17-'18     F     2     35½ Outpost     7.30       4051 8-44, 1917     L.R. 2     45½ Optional     10.80       4054 8-45, 1918     L.R. 2     46½ Onslaught     12.80
	4053 43-1916 L.R. 2 4514 Offset 11.40 4050 8-44-45, '17-'18 F 2 3514 Outpost 7.30 4051 8-44, 1917 L.R. 2 4514 Optional 10.80
2335 25-14 to 19, 6 leaf . F 194 3136 Nutty 5.20	4051 8.44 1017 I. P. 2 451/ Ontional 10.80
2338 25-14 to 16, 6 lear L.R. 194 3894 Nucle 6.80	4054 8.45 1018 L. R 2 461/ Onelaught 12 80
2337 25-1914 to 1910 U.R. 174 1074 Nymph 3.20	4054 8-45, 1918 L.R. 2 4614 Onslaught 12.80 4055 6-37-37A-17-20 F 2 3514 Obstinate 6.90
2340 25-1917 U.R. 13 17 Nominate. 3 20	
2341 25-1918-1919 R 2 471/6 Nitro 10.50	4057 8-45A-1919F 2 35¼ Outfit 7.30
2335 25-'14 to '19, 6 leaf F 134 3136 Nutty 5.20 2336 25-'14 to '16, 6 leaf L.R. 134 3834 Nude 6.80 2337 25-1914 to 1916 U.R. 134 1534 Nymph 3.20 2339 25-1917 U.R. 134 17 Nominate 3.20 2341 25-1918-1919 R 2 4745 Nitro 10.50 2342 25-1920 F 2 3136 Never 6.10 2343 25-1920 R 2 4745 Never 9.40	4058 8-45A-1919 L.R. 2 47½ Outlook 12.20
2343 25-1920	4059 8-45A-1919 U.R. 2 19% Overnow 5.40
2339 25-1917. U.R. 134 4414 Nocturnal. 7, 80 2340 25-1917. U.R. 134 17 Nominate. 3 20 2341 25-1918-1919. R 2 4746 Nitro. 10, 50 2342 25-1920. F 2 3136 Never. 6, 10 2343 25-1920. R 2 4746 Near. 9, 40 2344 25-1921-22. F 2 3534 Nature. 6, 60 2345 25-1921-22. R 2 5045 Nudity. 10, 80 2375 114 Ton Truck. F 214 3714 Nostril. 11, 20 2376 114 Ton Truck. R 234 51 Neft. 24, 60	4060 45B-1920. F 2½ 37½ Novelist 11.30 4061 45B-1920. R 2½ 54 Novelty 18.00
2345 25-1921-'22 R 2 50½ Nudity 10.80	
2375 11/2 Ton Truck F 21/4 371/2 Nostril 11.20	4062 43-A-1921-4 Cyl. F 2 35% Namesake. 8.40 4063 43-A-1921-4 Cyl. R 21/4 511/4 Nankeen. 14.40
23/6 1½ 10n 1ruck R 2¼ 51 Nett 24.60	4062 43-A-1921-4 Cyl. F 2 353/4 Namesake. 8.40 4063 43-A-1921-4 Cyl. R 2½ 51½ Nankeen. 14.40 4060 46-1921-8 Cyl. F 2½ 373/4 Novelist. 11.30 4064 46-1921-8 Cyl. R 2½ 533/4 Natural 16.50
MITCHELL	4064 46-1921-8 Cyl R 21/4 537/8 Natural 16.50
The state of the s	4090 Economy 11. 19-
4100 Big Six, 1916 to '20 F 2 39½ Vortex 11.10 4101 Big Six, 1916 to '20 R 2½ 47¼ Vignette 27.00	120
4101 Big Six, 1916 to 20 R 21/2 47/4 Vignette 27.00	4091 Economy Tr. '19-
4102 Light Six, 1916 to 1920	'20
4103 Light Six, 1916 to	
1920 R 2½ 45½ Vibrate 20.40	OVERLAND
	2513 59-69 F 134 3514 Parlor 6.20
. MONROE	2520 61-71-1912-'13. L.R. 21/4 42 Pearl. 8.90
	2522 79 F 134 3514 Pelican 7.30
3353 Rd. 16, 1915 to 19 F 11/2 3514 Wax 4.80	2523 79 L.R. 13/4 40 Penal 9.70
2005 D.J. 10 1015 to '10 H.D. 11/ 201/ Winter 2 20	2525 80-1915 F 1% 35 Pepper 7.20
3355 Rd. 16, 1915 to 19. U.R. 1½ 22½ Winter 3.30	2526 80-1915. F 124 35 Pepper 7.20 2526 80-1915. L.R. 2 45 Perfume 11.10
3353 Rd. 16, 1915 to '19 F 1½ 35¼ Wax. 4.80 3354 Rd. 16, 1915 to '19 R. 1½ 4½ Warm. 6.90 3355 Rd. 16, 1915 to '19 R. 1½ 22½ Winter. 3.30 3356 M-6, 1916 to '19 F 1½ 32½ Wagon. 5.40	2525 80-1915 LR 2 45 Perpure 11 10 2528 81-'15, 83-'16. F 134 3514 Perplex. 6.80
	2526 80-1915. L.R. 2 45 Perfume 11. 10 2526 81-15, 83-16. F 134 3514 Perplex. 6. 80 2529 81-1915. L.R. 134 44 Phial. 8. 80 2529 81-1915. L.R. 134 44 Phial. 8. 80
NASH	2525 80-1915. L.R. 2 45 Perfume 11.10 2528 81-15, 83-16. F 134 3514 Perplex. 6.80 2529 81-1915. L.R. 134 44 Phial. 8.80 2531 82-15, 86-16. F 2 3714 Phial. 8.80 2532 82-15 86-16. F 2 3714 Phial. 8.80
NASH	2526 80-1915. L.R. 2 45 Perfume 11. 10 2526 80-1915. L.R. 2 45 Perfume 11. 10 2528 81-15, 83-'16. F 134 3514 Perplex. 6 80 2529 81-1915. L.R. 134 44 Phial. 8 80 2531 82-'15, 86-'16. F 2 37½ Pillow. 9 90 2532 82-'15, 86-'16. L.R. 2 50½ Pity. 13 80 2535 83-'1916. L.R. 134 4514 Penny 9 10
NASH	2513 59-69 F 134 353/2 Parlor 6 20 2520 61-71-1912-'13 L.R. 23/4 42 Pearl 8 90 2522 79 F 134 351/2 Pelican 7 30 2523 79 L.R. 13/4 40 Penal 9 70 2525 80-1915 F 13/4 35 Pepper 7 20 2526 80-1915 L.R. 2 45 Perfume 11 10 2528 81-'15, 83-'16. F 13/4 351/2 Perfume 11 10 2528 81-'15, 83-'16. F 13/4 351/2 Perfume 18 80 2529 81-'1915 L.R. 13/4 44 Phial 8 80 2531 82-'15, 86-'16 F 2 373/2 Pillow 9 90 2532 82-'15, 86-'16 L.R. 2 501/2 Pity 13 80 2535 83-1916 L.R. 13/4 451/2 Penny 9 10 2537 84-W.K. 1916 F 13/4 351/4 Plerium 7 10
NASH  1750 681-82-83-84, '17 to '20	2525 80-1915. L.R. 2 45 Perfume 11. 10 2528 81-1915. L.R. 2 45 Perfume 11. 10 2528 81-1915. L.R. 134 44 Phial. 8. 80 2531 82-15, 86-16. F 2 3734 Pillow. 9. 90 2532 82-15, 86-16. L.R. 2 5016 Pillow. 9. 90 2532 82-15, 86-16. L.R. 2 5016 Pillow. 9. 90 2535 83-1916. L.R. 134 4514 Penny. 9. 10 2537 84-W.K1916. F. 134 3534 Pilgrim. 7. 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13. 60
NASH  1750 681-82-83-84, '17 to '20	2537 84-W.K1916. F 134 3534 Pilgrim. 7 .10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 .60 2540 75-75B-T-90CC-16
NASH  1750 681-82-83-84, '17 to '20	2537 84-W.K1916. F 134 3534 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow. 6.40
NASH  1750 681-82-83-84, '17 to '20	2537 84-W.K1916. F 134 3514 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19. F 134 3514 Plow. 6.40 2541 75-75B-T-90CC-'16
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle 12.30  1753 Six-1921. R 2½ 545 Obdurate 17.70	2537 84-W.K1916 F 134 3534 Pilgrim 7.10 2538 84-W.K1916 L.R. 2 50 Pistol 13.60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow 6.40 2541 75-75B-T-90CC-'16 '19 R 2 4054 Pluck 11.20
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19. F 134 3514 Plow. 6.40 2541 75-75B-T-90CC-'16 '19. R 2 4054 Pluck. 11.20 2542 75B-Rd-90 Rd-'17 '19. R 2 41 Pastry. 9.80
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916 F 134 3534 Pilgrim 7.10 2538 84-W.K1916 L.R. 2 50 Pistol 13.60 2540 75-758-T-90CC-'16 '19 F 134 3514 Plow 6.40 2541 75-758-T-90CC-'16 '19 R 2 4054 Pluck 11.20 2542 75B-Rd-90 Rd-'17 '19 R 2 41 Pastry 9.80 2546 90 Tr1917-1919 F 134 3514 Perform 7.10
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 60 2540 75-75B-T-90CC-16 19. F 134 3514 Plow. 6 40 2541 75-75B-T-90CC-16 19. R 2 4054 Pluck. 11 20 2542 75B-Rd-90 Rd-17 19. R 2 41 Pastry. 9 80 2546 90 Tr1917-1919. F 134 3514 Perform. 7 10 2547 90 Tr1917-1919. R 2 4054 Pause. 11 20
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 60 2540 75-75B-T-90CC-16 19. F 134 3514 Plow. 6 40 2541 75-75B-T-90CC-16 19. R 2 4054 Pluck. 11 20 2542 75B-Rd-90 Rd-17 19. R 2 41 Pastry. 9 80 2546 90 Tr1917-1919. F 134 3514 Perform. 7 10 2547 90 Tr1917-1919. R 2 4054 Pause. 11 20
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916 F 134 3534 Pilgrim 7.10 2538 84-W.K1916 L.R. 2 50 Pistol 13.60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow 6.40 2541 75-75B-T-90CC-'16 '19 R 2 4054 Pluck 11.20 2542 75B-Rd-90 Rd-'17 '19 R 2 41 Pastry 9.80 2546 90 Tr1917-1919 R 2 4054 Pause 11.20 2547 90 Tr1917-1919 R 2 4054 Pause 11.20 2544 85-4, 85-6, '17-'18. F 134 3514 Perform 7.10 2544 85-4, 85-6, '17-'18. F 134 3514 Perform 9.80 2545 85-4, 85-6, '17-'18. F 134 3514 Perform 9.80 2545 85-4, 85-6, '17-'18. F 134 3514 Perform 9.80
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 60 2540 75-75B-T-90CC-16 '19. F 134 3514 Plow. 6 40 2541 75-75B-T-90CC-16 '19. R 2 4058 Pluck. 11 20 2542 75B-Rd-90 Rd-17 '19. R 2 41 Pastry. 9 80 2546 90 Tr1917-1919. F 134 3514 Perform. 7 10 2547 90 Tr1917-1919. R 2 41 Perform. 7 10 2548 85-4, 85-6, '17-'18. R 2 4948 Pause. 11 20 2548 85-4, 85-6, '17-'18. R 2 4058 Penance. 16 30 2543 89-6 W.K17-19. F 2 37 Polite. 9 30
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 60 2540 75-75B-T-90CC-'16 '19F 134 3534 Plow. 6 40 2541 75-75B-T-90CC-'16 '19R 2 4054 Pluck. 11 20 2542 75B-Rd-90 Rd-'17 '19R 2 41 Pastry. 9 80 2546 90 Tr1917-1919. F 134 3534 Perform. 7 10 2547 90 Tr1917-1919. R 2 4054 Pause. 11 20 2544 85-4, 85-6, '17-'18. R 24 4634 Penance. 16 30 2548 89-6 W.K17-'19F 2 37 Polite. 9 30 2548 88-4 W.K17-'19F 2 37 Polite. 9 30 2548 88-4 W.K17-'19F 2 374 Pump. 10 70
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916 F 134 3534 Pilgrim 7, 10 2538 84-W.K1916 L.R. 2 50 Pistol 13,60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow 6.40 2541 75-75B-T-90CC-'16 '19 R 2 4054 Pluck 11,20 2542 75B-Rd-90 Rd-'17 '19 R 2 41 Pastry 9.80 2546 90 Tr1917-1919 R 2 41 Pastry 9.80 2547 90 Tr1917-1919 R 2 4054 Pause 11, 20 2544 85-4,85-6,'17-'18. F 134 3514 Perform 7, 10 2543 89-6 W.K17-'19. F 2 4054 Pause 11, 20 2543 89-6 W.K17-'19. F 2 37 Polite 9.30 2548 88-4 W.K17-'19. F 2 37 Polite 9.30 2548 88-4 W.K17-'19. F 2 3714 Pump 10, 70
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow. 6.40 2541 75-75B-T-90CC-'16 2541 75-75B-R-90CC-'16 19 R 2 405% Pluck 11.20 2542 75B-Rd-90 Rd-'17 '19 R 2 41 Pastry 9.80 2546 90 Tr1917-1919. R 2 405% Pause. 11.20 2544 85-4,85-6,'17-'18. F 134 3514 Perform 7.10 2544 85-4,85-6,'17-'18. R 214 463% Pause. 11.20 2545 85-4,85-6,'17-'18. R 214 463% Penance 16.30 2543 89-6 W.K'17-'19. F 2 37 Polite. 9.30 2548 88-4 W.K'17-'19. F 2 3714 Pump. 10.70 2549 88-4, 89-6, W.K'17
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19. F 134 3514 Plow. 6.40 2541 75-75B-T-90CC-'16 '19. R 2 4054 Pluck. 11.20 2542 75B-Rd-90 Rd-'17 '19. R 2 41 Pastry. 9.80 2546 90 Tr1917-1919. F 134 3514 Perform. 7.10 2547 90 Tr1917-1919. R 2 4054 Pause 11.20 2544 85-4,85-6,'17-'18. R 24 4054 Pause 11.20 2548 85-4,85-6,'17-'18. R 24 4054 Pause 11.20 2548 88-4 W.K17-'19. F 2 37 Polite. 9.30 2548 88-4 W.K17-'19. F 2 374 Pump 10.70 2549 88-4 W.K17-'19. F 2 3749 Pump 10.70 2550 Light 4-1920-'22-
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F 134 3534 Pilgrim. 7 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13 60 2540 75-75B-T-90CC-16 2541 75-75B-T-90CC-16 2542 75B-Rd-90 Rd-17 2542 75B-Rd-90 Rd-17 2547 90 Tr1917-1919. F 134 3514 Perform. 7 10 2546 90 Tr1917-1919. F 134 3514 Perform. 7 10 2547 90 Tr1917-1919. F 134 3514 Perform. 7 10 2548 85-4, 85-6, '17-'18. R 2 4034 Perform. 7 10 2548 85-4, 85-6, '17-'18. R 2 4034 Perform. 7 10 2548 85-4 W.K17-19. F 2 2548 88-4 W.K17-19. F 2 2548 88-4 W.K17-19. F 2 2549 88-4 S9-6, W.K17 2559 Light 4-1920-22- All. F 2 2014 Polar. 4 70
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F 134 3514 Pilgrim 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19 F 134 3514 Plow. 6.40 2541 75-75B-T-90CC-'16 '19 R 2 405% Pluck 11.20 2542 75B-Rd-90 Rd-'17 '19 R 2 41 Pastry 9.80 2546 90 Tr1917-1919. R 2 405% Pause. 11.20 2544 85-4, 85-6, '17-'18. R 214 463% Penance 16.30 2543 89-6 W.K'17-'19. F 2 37 Polite. 9.30 2548 88-4 W.K'17-'19. F 2 37 Polite. 9.30 2549 88-4, 89-6, W.K'17 '19 R 2 2550 Light 4-1920-'22- All F 2 2014 Polar. 4.70 2551 Light 4-1920-'22- 2518 R 2 2014 Polar. 4.70 2551 Light 4-1920-'22- 2518 R 2 2334 Poarch. 6.40
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7. 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13. 60 2540 75-75B-T-90CC-'16 '19F 134 3514 Plow. 6. 40 2541 75-75B-T-90CC-'16 '19R 2 405% Pluck. 11. 20 2542 75B-Rd-90 Rd-'17 '19R 2 41 Pastry. 9. 80 2546 90 Tr1917-1919. R 2 41 Pastry. 9. 80 2547 90 Tr1917-1919. R 2 405% Pause 11. 20 2544 85-4, 85-6, '17-'18. R 214 405% Pause 11. 20 2544 85-4, 85-6, '17-'18. R 214 405% Penance. 16. 30 2543 89-6 W.K'17-'19. F 2 37 Polite. 9. 30 2548 88-4 W.K'17-'19. F 2 3714 Pump. 10. 70 2549 88-4, 89-6, W.K'17 '19R 214 4718 Pulse 19. 10 2550 Light 4-1920-'22-All R 2 2334 Poarch. 6. 40 2552 20-4-1920-21-All, Willys-Kuight. F 2 355 Paddling. 7. 10
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19F 134 3534 Plow. 6.40 2541 75-75B-T-90CC-'16 '19R 2 405% Pluck. 11.20 2542 75B-Rd-90 Rd-'17 '19R 2 41 Pastry. 9.80 2546 90 Tr1917-1919. R 2 405% Pluck. 11.20 2544 85-4.85-6, '17-'18. F 134 3534 Perform. 7.10 2549 85-4.85-6, '17-'18. R 214 463% Pause. 11.20 2543 89-6 W.K'17-'19F 2 374 Pointe. 16.30 2543 89-6 W.K'17-'19F 2 374 Pointe. 16.30 2548 88-4 W.K'17-'19F 2 374 Pump. 10.70 2549 88-4.89-6, W.K'17 '19R 214 473% Pulse. 19.10 2550 Light 4-1920-'22- AllF 2 2034 Poarch. 6.40 2552 20-4-1920-21-All, Willys-Kuight. F 2 355% Paddling. 7.10
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30 1753 Six-1921. R 2½ 54545 Obdurate. 17.70 1754 Four—1921. F 2 3634 Occupant 9 00 1755 Four—1921. R 2 5074 Offensive. 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7. 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13. 60 2540 75-75B-T-90CC-'16 '19F 134 3514 Plow. 6. 40 2541 75-75B-T-90CC-'16 '19R 2 405% Pluck. 11. 20 2542 75B-Rd-90 Rd-'17 '19R 2 41 Pastry. 9. 80 2546 90 Tr1917-1919. R 2 41 Pastry. 9. 80 2547 90 Tr1917-1919. R 2 405% Pause 11. 20 2544 85-4, 85-6, '17-'18. R 214 405% Pause 11. 20 2544 85-4, 85-6, '17-'18. R 214 405% Penance. 16. 30 2543 89-6 W.K'17-'19. F 2 37 Polite. 9. 30 2548 88-4 W.K'17-'19. F 2 3714 Pump. 10. 70 2549 88-4, 89-6, W.K'17 '19R 214 4718 Pulse 19. 10 2550 Light 4-1920-'22-All R 2 2334 Poarch. 6. 40 2552 20-4-1920-21-All, Willys-Kuight. F 2 355 Paddling. 7. 10
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12 30  1753 Six-1921. R 2½ 54545 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7. 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13. 60 2540 75-75B-T-90CC-16 19. F. 134 3514 Plow. 6. 40 2541 75-75B-T-90CC-16 2542 75B-Rd-90 Rd-17 19. R. 2 4058 Pluck. 11. 20 2546 90 Tr1917-1919. F. 134 3514 Perform. 7. 10 2547 90 Tr1917-1919. F. 134 3514 Perform. 7. 10 2548 85-4, 85-6, '17-'18. R. 2 4058 Pusse 11. 20 2548 85-4, 85-6, '17-'18. R. 234 4058 Penance. 16. 30 2543 88-4 W.K17-'19. F. 2 3734 Pump. 10. 70 2548 88-4 W.K17-'19. F. 2 3734 Pump. 10. 70 2550 Light 4-1920-'22-AII R. 2 2014 Polar. 4. 70 2551 Light 4-1920-'22-AII R. 2 2014 Polar. 4. 70 2553 20-4-1920-21-AII, Willys-Knight. R. 234 5134 Painful. 13. 20
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 234 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstacle. 12.30  1753 Six-1921. R 244 5445 Obdurate 17.70  1754 Four—1921. F 2 3634 Occupant 9 00  1755 Four—1921. R 2 5034 Offensive 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7.10 2538 84-W.K1916. L.R. 2 50 Pistol. 13.60 2540 75-75B-T-90CC-'16 '19F 134 3534 Plow. 6.40 2541 75-75B-T-90CC-'16 '19R 2 405% Pluck. 11.20 2542 75B-Rd-90 Rd-'17 '19R 2 41 Pastry. 9.80 2546 90 Tr1917-1919. R 2 405% Pluck. 11.20 2544 85-4.85-6, '17-'18. F 134 3534 Perform. 7.10 2549 85-4.85-6, '17-'18. R 214 463% Pause. 11.20 2543 89-6 W.K'17-'19F 2 374 Pointe. 16.30 2543 89-6 W.K'17-'19F 2 374 Pointe. 16.30 2548 88-4 W.K'17-'19F 2 374 Pump. 10.70 2549 88-4.89-6, W.K'17 '19R 214 473% Pulse. 19.10 2550 Light 4-1920-'22- AllF 2 2034 Poarch. 6.40 2552 20-4-1920-21-All, Willys-Kuight. F 2 355% Paddling. 7.10
NASH  1750 681-82-83-84, '17 to '20. F 2 3834 Outward 11.10  1751 681-82-83-84, '17 to '20. R 2½ 5334 Outcome 18.60  1752 Six-1921. F 2 39 Obstracle. 12.30 1753 Six-1921. R 2½ 54545 Obdurate 17.70 1754 Four—1921. F 2 3634 Occupant 9 00 1755 Four—1921. R 2 5074 Offensive 13.80	2537 84-W.K1916. F. 134 3534 Pilgrim. 7. 10 2538 84-W.K1916. L.R. 2 50 Pistol. 13. 60 2540 75-75B-T-90CC-16 19. F. 134 3514 Plow. 6. 40 2541 75-75B-T-90CC-16 2542 75B-Rd-90 Rd-17 19. R. 2 4058 Pluck. 11. 20 2546 90 Tr1917-1919. F. 134 3514 Perform. 7. 10 2547 90 Tr1917-1919. F. 134 3514 Perform. 7. 10 2548 85-4, 85-6, '17-'18. R. 2 4058 Pusse 11. 20 2548 85-4, 85-6, '17-'18. R. 234 4058 Penance. 16. 30 2543 88-4 W.K17-'19. F. 2 3734 Pump. 10. 70 2548 88-4 W.K17-'19. F. 2 3734 Pump. 10. 70 2550 Light 4-1920-'22-AII R. 2 2014 Polar. 4. 70 2551 Light 4-1920-'22-AII R. 2 2014 Polar. 4. 70 2553 20-4-1920-21-AII, Willys-Knight. R. 234 5134 Painful. 13. 20

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In Every Town For Every Car

## Passenger Car Springs

	PAIGE-DET	ROIT	. 1		SCRIPPS-BO	HTOC	-Continued	***
N.	Madel In Will	Tath Wine Code	List	No.	Model To	. Was	. Lgth. Wire Code	List Price
		Lgth. Wire Code	100000000000000000000000000000000000000					120000000000000000000000000000000000000
0001	25-1912-'13 F 134				8 G-1918-'19 R		32 Smart	
	36-1912-'13 F 13/4			270	9 H-1915-19 F 0 H-1915-19 R	174	391/4 Smooth	
6010	36-14-15 F 2	335/8 Quire			1 39-40-41-42-1920 F			
	36-14-15L.R. 2	37 Quiver		270	2 39-40-41-42-1920 R			16.30
	6-46-1915 F 2	351/2 Quaint		2102	2 39-10-11-12-1920 R	274	5272 Silling	. 10.00
	6-38-'16-'17-'18 F 2	35¾ Question			STI	PHEN	21	
	6-38-39-'16-'19 Rd. R 21/4	421/2 Quaff			31.			
	6-46-'16-'17-'18 F 2 6-46-'16-'17-'18 Rd. F 2	365/8 Quarry		3800	O Series 80-1920-21-			
		36 Quadrant		000	All F	2	37½ Sonnet	9.80
		4814 Quoit		3801	1 83-84-1920-21-4	2	511/4 Soothe	15 50
		351/2 Qualm	8.40	3800	Pass. & Coupe R 2 85-86-1920-'21-5	2	31% Soothe	10.00
		387/8 Quarter		000.	Pass, and Sedan R	21/4	513/6 Sober	16.80
	6-51-55-'17 to '20 R 2½ 6-42,1920-'21 F 2			3803	Pass. and Sedan R 82-1920-21-Rd R	21/4	513% Sober 521% Soften	14.10
		371/2 Quaffing						
6024	6-66-1921-'22 F 2	5814 Quail			STUI	DEBAK	CER	
	6-66-1921-'22 R 21/2	393/8 Quartz	24.20	2000	25-1913 F	13/4	3534 Talent	6.00
0020	No. 6015 same as for		24,00		3 35-1913 F		373/2 Tape	
	No. 0015 same as for	mer 140. 0014			6 4B-1914-'15 F		37½ Tailor	
	DILLIANA			2007	4B-1914-'15L.F	2 2	37 Tanned	
	PULLMA	N			8 4B-1914-'15U.I		351/2 Tandem	
6100	Junior-1915 F 134	3314 Quadrille	6.10		6-B-1914-'15 F		3714 Tarnish	
	Junior-1916-'17 F 134				0 6-B-1914-'15L.F		481/2 Tarry	
					3 4-1916-17-18 F		3714 Tenant	
	REO				4-1916-17-18L.F		4734 Testify	
					0 4-1916-6-1916U.I		1812 Textile	
	R F 2	373/2 Sauce			6-1916-17-18 F		37 Tassel	
	RL.R. 2	41 Savage	8.90		6-'16-'17, 4-'17-'18L.F		48 Target	
	Fifth-1913-'14 F 2	38 Sedate			6-1917-'18U.I		181/2 Tango	
	Fifth-1912-'18L.R. 2	4334 Select			4-40-1919-'20 F		33½ Thick	
	Fifth-1912-'18U.R. 2	2534 Senate		2925	4-40-1919-'20 R	2	48 Thrall	
2813	Fifth-1915-'18 F - 2	373/8 Sentry		2026	Rin 6 Little 6-110-			-
2814	Shx-1915 to 1919 F 2	37 Serpent			'20	2	371/2 Throb	9.30
	Four-1918-1919 F 2	373 Sentry		2927	Big 6-1919-'20, 9			
	Four-1918-1919, R 2	5134 Shelter		0000	leaf. R 3 Little 6-1919-'20, 8	2	531/4 Thunder	17.60
	Six-1915-'19,7 leaf R 214	49 Sheaf		2928	Little 6-1919-20, 8	2	531/4 Ticket	14 90
	Six-1915-'19,81caf, R 21/4 Model T-1920-'21, F 2	50 Shell		2929	leaf. R Special Six-1920 F	2	37% Tangent	9 20
	Model T-1920-'21. F 2 Model T-1920-'21 R 2	373 Sentry 5134 Shelter		2930	Special Six-1920 R	2	5234 Tansy	14.70
	3/4 and 13/4 Ton Trk F 2	37 Serpent			EG-Big 6 and EH-		4	
	34 and 134 Ton Trk R 234	393% Shear			Special Six-1921-			
2010	74 and 174 1011 11K 11 274	0078 011641	10.00			2	371/8 Tangible	9.10
	SAXON				2 EG-Big 6-1921-'22. R	2	53 Tangling	14.70
			200	2933	EH-Special 6-1921-	2	EOL / Tall	14 70
6050	4-Cylinder F 11/2			2024	'22	2	53¼ Tailless	14.70
6051	4-Cylinder R 11/2			2001	'22 F	2	351/2 Tannery	7.60
	6-Cylinder, '16-'17. F 2	28 Sketch		2935	EJ-Little 6-1921-			1000
6053	6-Cylinder, '16 R 2	2914 Sleigh			'22 R	2	49 Tantrum	11.00
6054	6-Cylinder, '17 R 21/4	411/2 Sliding						
	Y, 1918-'19 F 2	271/2 Slang			V	ELIE		
6056	Y, 1918-'19 R 21/4	411/2 Smoke	15.30	4150	38, 1918-'19 F	2	363/4 Uncle	9.90
	Model 125, '20-'21, U.R. 2	387/8 Sliver	11.00		38, 1918-'19L.R		46 Umpire	10.90
6058	Model 125, 20-'21L.R. 2	413% Sleeper	12,90		38-1918-'19, 48-34-			
	SCRIPPS-BO	ОТН			1920-'21U.F		1934 Ultra	
					48-1920-'21 F	2	36½ Uncle	
	C-1915-16-17 F 11/2			4151	48, 1920-'21 R	2	46 Umpire	
		24 Sluggard			34, 1920-'21 F	134	343% Usage	
	C-1917 R 11/2			4154	34, 1920-'21 R	2	5034 Usher	11.60
		32 Smile			WE	тсот	-	
	D-8 Cyl'16-'17-'18 R 2	3914 Smuggle						
	6-39-1918-'19 F 134	341/2 Smock		6110	5 and 7 Pass1920. F	2	351/2 Sputter	
	6-39-1918-'19 R 134	4914 Snail		6111	5 Pass1920 R	2	5334 Squabble	
2757	G-1918-'19 F 134	31% Smutty	5.30	6112	7 Pass1920 R	23/2	56 Squall	15.90

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## Truck



BETHLEHEM TRUCKS Liet	BACKARD TRUCK
No Model Loc Wdh Loth Wire Code Price	No. Model Loc. Wdh. Lgth. Wire Code Price
6150 K-1 Ton F 2 3514 Temper \$9.00	7025 BE-1½ Ton F 2½ 39¼ Imitate 22.40
6151 K-1 Ton	7026 BE-1½ Ton R 2½ 44¾ Immerge, 34.40
6153 G-2 Ton R 3 51 Temple 30.90	7028 CE-2 Ton R 2½ 44½ Impart 38.00
6150 K-1 Ton. F 2 3514 Temper. \$9.00 6151 K-1 Ton. R 234 4835 Temperate. 23.70 6152 G-2 Ton. F 234 3935 Tempest. 16.50 6153 G-2 Ton. R 3 51 Temple. 30.90 6154 H-3 Ton. F 234 3935 Tempt. 16.50 6155 H-3 Ton. R 3 55 Tempted. 42.00	7029 DE-3 Ton F 3 4114 Impeach 35.60
BUICK TRUCK	7029 EE-4 Ton. F 3 41½ Impeach. 35.60
1141 Four-34 Ton F 2 351/2 Abash 7.80	7025 BE-1½ Ton. F 2½ 39½ Imitate. 22.40 7026 BE-1½ Ton. R 2½ 44¾ Immerge. 34.40 7027 CE-2 Ton. F 2½ 49¼ Immerge. 34.40 7027 CE-2 Ton. R 2½ 44½ Impart. 38.00 7029 DE-3 Ton. R 2½ 44½ Impart. 38.00 7029 DE-3 Ton. R 3 41½ Impece. 50.00 7030 DE-3 Ton. R 3 41½ Impeach. 35.60 7031 EE-4 Ton. F 3 41½ Impeach. 35.60 7031 EE-4 Ton. R 3 45 Impel. 60.00 7032 FE-5 Ton. F 3 41½ Implore. 39.60 7033 FE-5 Ton. R 3½ 52½ Imply. 80.80
CHEVROLET TRUCK	7033 FE-5 Ton R 3½ 52½ Imply 80.80
3750 T-1 Ton F 2½ 37 Evil 12.20 3751 T-1 Ton R 2½ 53 Exalt 31.50	REO TRUCK
COMMERCE TRUCK	REO TRUCK  2811 J-2 Ton. F 2½ 43½ Senator. 16.50  2812 J-2 Ton. R 2½ 41¼ Sensation. 22.20  2814 F-½-1¼ Ton. F 2 37 Serpent. 10.50  2819 F-¾-1¼ Ton. R 2½ 39⅓ Shear. 15.60
3500 E-1 Ton F 21/ 35 Efface 10.30	2814 F-34-114 Ton F 2 37 Serpent 10.50
3501 E-1 Ton R 3 49½ Effigy. 29.00 3500 EP-1½ Ton F 2½ 35 Efface. 10.30 3502 EP-1½ Ton R 3 49 Egress. 30.70	2819 F-34-114 Ton R 214 3938 Shear 15.60
3502 EP-13 Ton R 3 49 Egress 30.70	REPUBLIC TRUCK 2856 Disp34 Ton F 2 3534 Shadow 7.80
1556 1915-'22. F 134 3514 Fantasy 7.00 1557 1915-'22. LR. 2 4134 Flute 11.40 1555 1915-'22. U.R. 2 17 Flirt. 4.10	REPUBLIC TRUCK   2856 Disp34 Ton   F   2   3534 Shadow   7   80   2856 Spec34 Ton   F   2   3534 Shadow   7   80   2857 Disp34 Ton   R   234   5134 Shadow   7   80   2857 Disp34 Ton   R   234   5134 Shadow   22   40   2858 Spec34 Ton   R   234   5134 Seotch   26   60   2858 Spec34 Ton   R   234   5134 Seotch   26   60   2859 Spec34 Ton   R   234   5134 Seotch   26   60   2852 Spec34 Ton   R   234   5134 Sermon   12   80   2853 Spec34 Ton   R   234   3734 Salver   14   90   2861 Spec34 Ton   R   234   3734 Salver   14   90   2861 Spec34 Ton   R   235 Spec.   35   60   22   60   22   60   22   60   60
1556 1915-'22	2859 Spec3 Ton R 24 51½ Shanty 22.40 2859 Spec3 Ton R 2½ 51½ Scotch 26.60
1555 1915-'22U.R. 2 17 Flirt 4.10	2858 10-1 Ton F 214 3734 Salivate 12.30
	2859 10-1 Ton R 2½ 51½ Scotch 26.60 2852 11-1½ Ton F 2½ 38 Sermon 12.80
1850 C, D, G, H, M, F 2½ 39 Horde 10.60	2853 11-11/2 Ton R 21/4 511/2 Shawl 32.10
1852 SD-1 Ton F 214 39 Hotel 11.10	2861 12-2 Ton. R 3 51 Satan 47.80
1853 SD-1 Ton R 2½ 49¾ Huge 19.80	2854 A-2 Ton F 21/4 377/8 Severe 15.60
1855 TE-1½ Ton R 3 53 Holy 26.60	2855 A-2 Ton R 3 51 Shaker 46.80 2862 19-21/4 Ton F 21/4 371/4 Silly 15.20
1856 UE-2 Ton R 3 5234 Honest 34 50	2863 19-214 Ton R 3 51 Silver 38.00
1857 WD-3½ Ton F 3 43 Healthy 23.30	2865 20-3½ Ton
1850 C, D, G, H, M, F   2½   39   Horde   10.60	SIGNAL TRUCK
FORD TRUCK 2000 T-Made only in 7	3525 H-1½ Ton. F 2½ 43½ Slaver. 18.50 3526 H-1½ Ton. R 3 5334 Sledge. 31.70 3525 J-2 Ton. F 2½ 43½ Slaver. 18.50 3527 J-2 Ton. R 3 54 Slight. 46.80
leaf, 18 lb. type	3525 J-2 Ton F 21/4 431/2 Slaver 18.50
for 5 or 2 pass F 1½ 31½ Joy 2004 T-9 leaf for bus,	3527 J-2 Ton
del. cars, con-	SMITH-FORM-A-TRUCK 2050 1916-17 9 leaf S 2 42 Seabhard 15 20
verted trucks & Ford trucks F 11/4 311/4 Joyful	2051 1916-'17, 10 leaf S 2 42 Scald 15.80
Ford trucks F 1½ 31½ Joyful 2005 T-10 leaf for bus	2052 1916-'17, 11 leaf S 2 42 Scamper 16.20
or delivery cars, etc	2050 1916-'17, 91eaf. S 2 42 Scabbard 15. 20 2051 1916-'17, 101eaf. S 2 42 Scald. 15. 80 2052 1916-'17, 111eaf. S 2 42 Scamper 16. 20 2053 1916-'17, 121eaf. S 2 42 Scepter 16. 80 2056 1917-'18, 121eaf. S 2½ 42 School. 22. 50 2054 1916-'17, 56 Td. Rlf. 2 31½ Scholar. 6. 20
2008 1 Ton Regular	2054 1916-'17, 56 TdRlf. 2 31½ Scholar 6.20
Ford Truck, Lt. or Rt	STEWART TRUCK   3600 11-34 Ton.
O AL O PRIMA	3601 11-34 Ton R 214 4834 Swarm 18.90
G. M. C. TRUCK  1925 16-1 Ton. F 2½ 37½ Juggler. 11.40 1926 16-1 Ton. R 2½ 52½ Jabber 25.50 1927 31-1½ Ton. F 2½ 35½ Jaunting. 12.60 1928 31-1½ Ton. R 3 52½ Jealous. 32.60 1929 41-2 Ton. F 2½ 39 Jewelry. 12.90 1930 41-2 Ton. R 3 52½ Jewish. 40.10	3603 8-12-1 Ton R 214 49 Swelter 25.70
1927 31-1½ Ton F 2½ 35½ Jaunting 12.60	3604 9-1½ Ton F 2½ 40½ Swipe 18.30
1928 31-1½ Ton R 3 52½ Jealous 32.60	3606 7-2 Ton F 2½ 4014 Swoon. 18.20 3607 7-2 Ton R 3 52½ Sword. 46.60 3608 10-3½ Ton R 4 53½ Surety 21.00 3609 10-3½ Ton R 4 53¾ Surety 21.00 3610 6-34 Ton F 2 33¼ Stakes. 9.60 3611 6-34 Ton R 2 45 Stalk. 17.30
1930 41-2 Ton R 3 52/4 Jewish 40,10 1931 71-3½ Ton F 3 43½ Judgment. 24,30 1932 71-3½ Ton R 4 52½ Juddicial. 54 30 1933 101-5 Ton R 4 52½ Judicial. 54 30 1933 101-5 Ton R 4 52½ Justness. 72,00	3607 7-2 Ton R 3 52½ Sword 46.60
1931 71-3½ Ton F 3 43½ Judgment 24.30	3609 10-3½ Ton R 4 53¾ Surf 70.80
1933 101-5 Ton F 3 4334 Just 25.50	3610 6-34 Ton F 2 3314 Stakes 9.60
1934 101-5 Ton R 4 5278 Justness 72.00	TRAFFIC TRUCK
INDIANA TRUCK 2627 T-1 Ton F 2 3634 Midland 11.70	TRAFFIC TRUCK   3550 2 Ton   F 2 35½ Tidal   11.10   3551 2 Ton   R 2½ 44½ Tiger   24.20
2628 1-1 Ton. R 2½ 483½ Minnie. 24,00 2625 Q-1½ Ton. F 2½ 39¼ Minus. 16,80 2630 Q-1½ Ton. R 3 47¾ Mishap. 33,50 2625 D-2 Ton. F 2½ 39¼ Middy. 16,80 2626 D-2 Ton. F 2½ 39¼ Middy. 16,80 2631 25-2½ Ton. F 2½ 39½ Midst. 18,00 2632 25-2½ Ton. R 3 48½ Midwife 47,10 2633 35-3½ Ton. R 3 48½ Midwife 47,10 2633 35-3½ Ton. R 3 39¾ Mighty. 22,10 2634 35-3½ Ton. R 34 48½ Migrate 58,20	3575 20-1 Ton. F 214 3812 Tipsy. 12.30 3576 20-1 Ton. R 214 5114 Tissue. 26.30 3577 30-112 Ton. R 214 39 Titbit. 14.00 3578 30-112 Ton. R 3 5224 Toast. 35.30 3579 50-2 Ton. F 214 39 Toddy 16.10 3580 50-2 Ton. R 3 5234 Tonnage. 42.60
2625 D-2 Ton F 21/2 391/4 Middy 16 80	3576 20-1 Ton
2626 D-2 Ton R 3 48¼ Mislay 45.60 2631 25-2¼ Ton F 214 30¼ Midst 18.00	3578 30-1½ Ton R 3 52¾ Toast 35.30
2632 25-21/2 Ton R 3 481/2 Midwife 47.10	3579 50-2 Ton F 21/4 39 Toddy 16.10
2633 35-3½ Ton. F 3 39¾ Mighty 22 10 2634 35-3½ Ton R 3½ 48½ Migrate 58.20	VIM TRUCK
MAXWELL TRUCK	4175 21-½ Ton F 2 35 Vapor 8.30
2375 1½ Ton. F 2½ 37½ Nostril. 11.20 2376 1½ Ton. R 2½ 51 Neft. 24.60	4177 25-1 Ton F 21/4 391/2 Vital 13.80
	4178 25-1 Ton
NASH TRUCK 1775 2017-18-3017-18 F 2½ 35½ Onset 11.10	4175 21-1/4 Ton. F 2 35 Vapor. 8.30 4176 21-1/5 Ton. R 2 451/5 Vegetate. 12.50 4177 25-1 Ton. F 21/4 391/5 Vital. 13.80 4178 25-1 Ton. R 21/2 523/4 Victim. 30.60 4179 22-2 Ton. F 21/2 411/8 Villa. 15.90 4180 22-2 Ton. R 3 55 Visit. 36.00 4181 29-1/4 Ton. F 2 373/4 Vestment 10.00
1776 2017-18 R 214 5014 Offs1 27 80	2 01/8 restment 10.00
1777 3017-18. R 2½ 51½ Obedient. 33.80 1778 4016-17-18-Quad. F 2½ 46 Ordeal. 23.40 1779 4016-17-18-Quad. R 2½ 46 Outside. 24.80	6425 15-3/4 Ton F 2 401/2 Sphinx 11.70
1779 4016-17-18-Quad R 2½ 46 Outside 24.80	6426 15-34 Ton R 214 501/2 Spider 22.30
OLDSMOBILE TRUCK	6428 20-2 Ton R 3 401/ Spirit 31 50
4090 1919-'20-'4 Ton F 2 36½ Nobleman 8.20 4091 1919-'20-'4 Ton R 2½ 49½ Nobody 22.00	WHITE TRUCK           6425         15-34 Ton.         F         2         40)%         Sphinx         11.70           6426         15-34 Ton.         R         21/4         501/2         Spider.         22.30           6427         20-2 Ton.         F         21/2         39%         Spike.         16.40           6428         20-2 Ton.         R         3         401/4         Spirit.         31.50           6429         40-3 Ton.         F         3         425/6         Siphon.         24.00           6430         40-3 Ton.         R         31/2         50         Skeleton.         49.80
	0430 40-3 10n R 3½ 50 Skeleton 49.80
To make your wants clear to us, order by Stock N	umber. When ordering by wire, use the Code Word, o Vulcan Judge, one Joy."
for example: "Express tw	o vuican juage, one joy."

### SQUARE SEE AUTOMOBILE SPRINGS FOR REPLACEMENT. 1922 Price List.

Square See Automoble Springs for Replacement are carried in stock and can be shipped same day order is received Where stock number appears, give number only in ordering.

We can supply springs for cars not shown in this list. If not listed, give complete measurements, giving name, year and model of car.

All listed springs made of automobile spring steel, scientifically heat treated, insuring them of maximum elasticity and endurance, with minimum of vibration.

Springs painted black.

Prices subject to change without notice.

Style of Spring.....for. Front or Rear. Remove all weight from spring before measuring length and size.

How much out of Center ..... 1 inch out of center makes 2 inches difference in length of ends.

Size of Eyes.....Standard Quality or Alloy..... Bushed or Unbushed. If we send a spring with more leaves than are usually supplied, it is because the makers consider it advisable; if not

	ted, it is a simple matter								rs consid	er it a	dvisab	le; if	not
Stock		Loca-			No.		Stock		Loca			No.	
No.	- Model		Width	Lgth.	Lvs.	Price 1	No.	Model		Width	Lgth.	Lvs.	Price
236	6-39H, 6-39K	BURN 9-21 F	2	361/2	7	\$5.50	2142	O (7 Plate)	19-20 F	214	39	7 8	\$6.50
1145	D-45, 4710	01CK 5-17 F	2	361/4	8	5.25	$\frac{2143}{2147}$	O, T. C., Sedan, Lime	19-22 R 19-22 F	21/4	5713	8	10.00
1146 1158	D-45, E-451	6-18 R	21/2	461/8	8	11.00	2216	B T C (Nih Center)	MOBILE 8-20 R	2	511/4	7	8.00
1197	37; E-41	6-18 F	134	345%	7 9	3.50	2217	R. T. C. (Nib Center) R (Nib Center)	8-20 F	134	36 1/8	6	4.50
1066	E, H, and K-44, 45,		112111	361/4	9	6.25	2220	R (Center Bolt Type) R (Center Bolt Type)	20-21 F 20-21 R	1%	36 1/8 51	6	4.50 8.00
1068	46, 47	8-20 F 1-22 F	2 2	36 ½ 36 ½	10	6.25 6.25	3950	FJORDAN	(Carbon	Steel)	27.7		
1070 1075		1-22 F	2	36 1/2	13	7.50		LEX	INGTON	2%	37 76	6	6.00
	37 (4 cyl.)2	1-22 F	134	36	7	4.25	3284 3285	"S", ST	0-22 F 0-22 R	2 2	321/s 52	6	4.25 8.50
1222	55, 57, Early 591 55, 57, 59, 61 T. C.,	7-20 F	Steel)	421/4	9	11.50	4060	LI	BERTY	1%	3814	8	5.25
1234	1 Limo., Town Car.	R.SI	ide 2	54	12	16,25	4061 }	10A, B, C, D	6-22 R	2	38 1/8 51 3/8	7	7.00
1237	Conv1'	7-22)						MA	XWELL		****		2.5
	Bush Type)2	1-22 R.Fr	't. 2	421/4	9	13.00	2343 2344	25	8-21 R	1%	3214	7	3.25 6.00
1200	Bush Type)2		t. 2	421/4	9	13.00	2345	25	VASH	2	32	6	3.50
1427		LMERS 6-17 R	2	54	7	8.50	3398	All Types, 6-81 to 6-87	18-21 F	2	39%	10	7.00
1426	35 A, B, C	7-22 F	134	38½ 54	7	5.00 8.50	2452	34B	KLAND IS-19 F	134	351/8	6	3.75
1,2,	) 4 and 5 Page (		-	01	MA	0.50	2454 2455	34B, T. C	20-22 F	134	51 36	7	5.75
3059		7-22 F	2	40	9	6.50	2456	34C, 6-44, T. C. Coupe:	SMOBIL	E 1%	51	8	6,25
1512	4-901	7-19 F	1%	22%	8	4.00	632 635	45, 45A, Except Rdster 37, 37A, T. C	7-18 F	2	361/8	7	4.50
1513 1520	4-90, T. C1	6-19 R	2 134	303/4	9	5.25 3.50	636	37, 37A, T. C	7-21 R	21/4	54	9	9.00
1521	4-90, T. C	0-21 R	2	30%	9	5.25	09 (	45B, 46	9-22 F 21-22 F	21/4	38 36	8	6.50 4.75
C206 C208	4-90 4-90, T.C. and Coupe	22 F 22 R	2 34	3034	9	4.00 5.25	010	47, 8 Cyl	21-22 R	214	54	9	9.00
C300	40-41	0-22 F	2	38	9	6.25	1	T. C., Coupe, Rds		land and		and the same	
C302	40-41 T. C		2	52	7	8.00	952	34 Ton, 1 Ton	F	2	37	9	6.25
1476	8-70 8-90	8-22 F	21/4	391/4	8	7.50	951 953	¼ Ton. 1 Ton	R	21/4	50 50	10 11	12.75 13.50
C1	All Models	8-21 F	1%	38	9	6.00	2540	75, 75B, 90CC, 90 Rdstr. 1	6-17 F	1%	3614	6	3.75
1555	All Types	5-22 F	1%	361/4	6	4.75	2549 2550	90, 90B, T. C	7-19 F 7-19 R	134	361/2	7 8	4.00 7.00
1554 1562		9-20 L. B	2 2	431/8	7	7.00 7.00	2556 2557	4	0-22 F 0-22 R	2	21 1/8 24 5/8	7	3.50 4.50
1525	DODGE COMME Commercial1	RCIAL (A	Allov St		7	5.00	2564	20 (Willys-Knight)2	0-22 F	2	3658	6	4.75
1526	Commercial1	5-22 L. R	2. 2	431/8	9.	8.00	6019	6-38, 6-39		2	36%	8	5.00
1555	All Types	5-22 F	134	361/4	6	4.00	6021 6024	6-51, 6-55, All Types1 6-42, 6-44, All Types1	7-19 F 9-22 F	2 2	3814	10	7.25 6.50
1554 1562	T. C., 15-20; Sedan19 T. C	9-20 L. R 9-22 L. R	2 2	43 1/8 45 1/8	7	5.50 6.00	6026	6-66, All Types (2d Series)2		2	401/4	11	7.75
1525	Commercial1	CIAL (C			7	4.25	9015		REO		381/2	7	
1526	Commercial15	5-22 L. R	. 2	431/8	9	6.50	2817	6 Cyl. and 34 Ton 1	5-19 F	2	3814	9	5,25 6.25
829	All Types1	ORT 6-20 F	2	375%	7	5.50		34 Ton, 114 Ton (Heavy).	TRUCK	2	38%	9	8.00
834	All Types2	1-22 F	2	37%	7	5,25	2826	Ton, 114 Ton (Heavy). Ton, 114 Ton, Speed W	gn. R	214	41%	11	12.00
3850 3852	All Types19 T. C., Phae, Sedan19		2 2	36 541/s	6	4.50 8.50		4 Cyl1	EBAKER	1%	3414	7	4.00
2000	F	ORD		3334	7		2931	Big 6 & Special 61 Spec. 6, T. C., 2 & 4	8-22 F	2 4	38%	ż	5.50
2001	"T" (0 Plets)	1-22 R	11/2	5034	S	:	2932	Pass. Rd., (Flange } 1	8-20 R	2	561/2	8	9.00
2004	"T" (10 Plate)1	1-22 R	1 ½ 2	3334 5034	10		0000	Big 6, T. C., Spec, 6					
1960	HLate 2	RANT	2	38	8	6.25	2933 {	Bush)	8-20 R	2	561/2	9	9.50
3179	45, T. C. Rdstr. Cpe1	YNES	21/4	391/4	S	8.50		Light 6, All Types2 Light 6, T. C. and Cpe2		2 2	361/2	7	5,50 9.00
	HU	DSON		3914	9	8.00			ELIE	1%	1000		
2139	M. T-Pass. and Phae	18 R	21/4	57 18	10	11.00		482		2	351/4	8	4.25 5.50

\*Prices on Application.
We carry a complete line of springs for all makes of cars and trucks.
Write for our complete catalogue.
No. 2000, Ford, each, 1256. No. 2001, each, 3851. No. 2004, each, 2107. Balance of page, 401 and 56 P. C.

(F)SEMI-FINISHED SPRING REPAIR PLATES.

## (F)SEMI-FINISHED MAIN PLATES. In Bundles Only.



For quick Auto Spring Repairs. In bundles only.

In bundles only.			
	Weight per	Stock	Price per
1½ inches wide, 6 plates— Lgth. 39-35-30-25-20-15	Bdle.	No. 10	Bdle. \$ 2.55
1½ inches wide, 7 plates— Lgth. 42-38-33-28-23-18-13	20 lbs.	11	3.00
1¾ inches wide, 5 plates— Lgth. 42-37-30-23-16		20	2.85
1% inches wide, 6 plates— Lgth. 44-39-33-27-21-15		21	3.30
1% inches wide, 7 plates— Lgth. 46-41-35½-30-24½-19-13½		22	3.90
1¾ inches wide, 8 plates— Lgth. 48-43-38-33-28-23-18-13		23	4.50
2 inches wide 5 plates			
Lgth. 42-37-30-23-16		37	3.30
Lgth. 42-37-31½-26-20½-15		30	3.75
Lgth. 44-39-34-29-24-19-14		31	4.35
Lgth. 46-41-36½-32-27½-23-18½-14		32	5.10
Lgth. 48-43-39-35-31-28-23-19-15 2 inches wide, 10 plates—	40 lbs.	33	6.00
Lgth. 50-45-41-37-33-29-25-21-17-13	43 lbs.	34	6.45
2¼ inches wide, 6 plates— Lgth. 42-37-31½-26-20½-15	28 lbs.	40	4.20
2¼ inches wide, 7 plates— Lgth. 46-40-36-31-26-21-16	37 lbs.	44	5.55
2¼ inches wide, 10 plates— Lgth. 50-45-41-37-33-29-25-21-17-13		41	7.50
Bold-faced Type indicates fe-inch	Steel.		

	½ Main	39-42-46	Weight per Bdle.	Stock No.	Price per Bdle. \$ 4.80
	4 Main—	42-44-46-48-50		25	4.95
2	Main— 1 each, length	42-44-46-48-50-52	50 lbs.	36 -	7.50
2	4 Main— 1 each, length	42-44-46-48-50-52	56 lbs.	43	8.40

### (F)SEMI-FINISHED SHORT PLATES.

In Bundles Only.



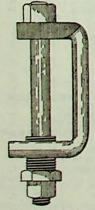
1½ Sh. Pl.— 2 each, length 14-15-16	Weight per Bdle	Stock No. 12	Price per Bdle. \$ 1.35
1¾ Sh. Pl.— 1 each, length 13-14-15-16-17-18	10 lbs.	24	1.50
2 Sh. Pl.— 1 each, length 13-14-15-16-17-18	11 lbs.	35	1.65
2¼ Sh. Pl.— 1 each, length 13-14-15-16-17-18	13 lbs.	42	1.95

Light-faced Type indicates 32-inch Steel.
101 P. C., F. O. B., Racine, Wis.

Goods marked (F) not carried in stock, shipment from factory.

### EMCO SPRING SUPPORT CLAMPS.

103 P. C., F. O. B., Racine, Wis.



For Chevrolet, Saxon and all other cars equipped with quarter elliptic springs. Made of special formula steel, easily installed. No more expense for broken spring bolt When ordering specify make of car and whether for front

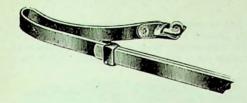
### AUTOMOBILE SPRING LINKS.



Light Pattern.

	Center to Center.	Width of Bosses.	Thickness of Bosses.	Price Each.
No. 300 A	11/2	11/8	70	\$0.06
No. 300B	13/4	11/8	16	.06
No. 300C	2	11/4	70	.06
No. 300D	. 21/4	11/4	7.	.06

IOI P. C.



### "NEW WAY" ATTACHMENT.

This attachment is especially designed for cars equipped with shock absorbers, Gabriel Snubbers, etc., and can be put on in ten minutes without any alterations or special tools. One alloy spring steel hook bolt is used on each side of the frame in connection with a strong steel drop forging, and very little space is required for attaching to car frame.

### LYON STANDARD REAR BUMPERS.

Frame clamp for attaching to cars having frame extension in the rear. Spring clamp for all cars having three-quarter elliptic springs.



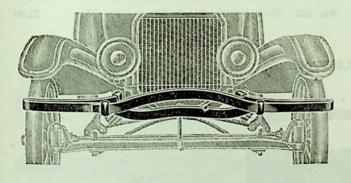
### Medium Size—

		Clips	
Large Size-No. 53.	Black with Nickel	Clips	14.00
		Spring Clamp.	
		Clips	

### LYON STANDARD BUMPER FOR FORD CARS.

This bumper is made of the same high-grade spring steel and has all the mechanical advantages of Lyon Bumpers used on higher priced cars. It has pressed steel attaching brackets which are guaranteed not to break. It does not interfere with Hassler Shock Absorbers.

		Prices.	
	7.	Black with Nickel Clips	
No. Rear—	8.	Nickel with Black Clips 12	.00
		Black with Nickel Clips	.00



### LYON DOUBLE BAR BUMPER FOR FORD CARS.

An original design combining fine appearance with the popular double bar front or broadened bumping surface, and built exclusively for Ford cars. Pressed steel attaching brackets are used and this "all steel" Bumper insures positive protection.

	Pric	es.	
Front-			
No. 207.	Black with Nickel	Clips	\$13.50
		Clips	
Rear-			
No. 257.	Black with Nickel	Clips	14.50
		Clips	

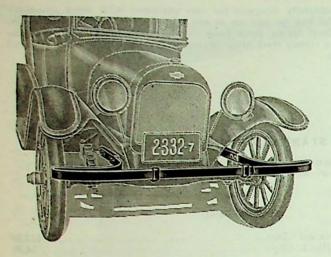
### LYON DOUBLE BAR BUMPER FOR "CHEVROLET 490."

Front No. 219. Black with Nickel Clips.......\$14.50 Front No. 220. Nickel with Black Clips.....\$16.00

Lyon Bumpers are approved by Insurance Underwriters.

10 per cent reduction on Collision Insurance for front Bumpers, 21/2 per cent for rear.

### LYON "SPECIAL" BUMPERS.



We have designed special bumpers and brackets which are attached without drilling or alteration, for cars where it is impossible to attach the standard Lyon Bumper. These brackets are rigidly constructed of the highest grade material.

### "Chevrolet 490"

### 1922 Model.

No. 19. Black with Nickel Clips	Front-						
Earlier Models.  No. 17. Black with Nickel Clips. 12.00 No. 18. Nickel with Black Clips. 13.50  Rear— No. 117. Black with Nickel Clips. 12.00 No. 118. Nickel with Black Clips. 13.50  "Chevrolet F. B." Rear.  No. 119. Black with Nickel Clips. \$12.50 No. 120. Nickel with Black Clips. 14.00  "Franklin."  Front— No. 21. Black with Nickel Clips. \$12.50 No. 22. Nickel with Black Clips. 14.00  Rear— No. 121. Black with Nickel Clips. 12.50		19.	Black	with	Nickel	Clips	\$12.00
No. 17. Black with Nickel Clips.       12.00         No. 18. Nickel with Black Clips.       13.50         Rear—       No. 117. Black with Nickel Clips.       12.00         No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50	No.	20.	Nickel	with	Black	Clips	13.50
No. 17. Black with Nickel Clips.       12.00         No. 18. Nickel with Black Clips.       13.50         Rear—       No. 117. Black with Nickel Clips.       12.00         No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50							
No. 18. Nickel with Black Clips.       13.50         Rear—       No. 117. Black with Nickel Clips.       12.00         No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50				Earl	lier Mo	dels.	
Rear	No.	17.	Black	with	Nickel	Clips	12.00
No. 117. Black with Nickel Clips.       12.00         No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50	No.	18.	Nickel	with	Black	Clips	13.50
No. 117. Black with Nickel Clips.       12.00         No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50	Rear_						
No. 118. Nickel with Black Clips.       13.50         "Chevrolet F. B." Rear.         No. 119. Black with Nickel Clips.       \$12.50         No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50		17.	Black	with	Nickel	Clips	12.00
"Chevrolet F. B." Rear.  No. 119. Black with Nickel Clips						Contract to the second	
No. 119.       Black with Nickel Clips.       \$12.50         No. 120.       Nickel with Black Clips.       14.00         "Franklin."         Front—         No. 21.       Black with Nickel Clips.       \$12.50         No. 22.       Nickel with Black Clips.       14.00         Rear—         No. 121.       Black with Nickel Clips.       12.50							
No. 120. Nickel with Black Clips.       14.00         "Franklin."         Front—       No. 21. Black with Nickel Clips.       \$12.50         No. 22. Nickel with Black Clips.       14.00         Rear—         No. 121. Black with Nickel Clips.       12.50			"C	hevro	let F. 1	B." Rear.	
"Franklin."  Front— No. 21. Black with Nickel Clips	No. 1	19.	Black	with	Nickel	Clips	\$12.50
"Franklin."  Front— No. 21. Black with Nickel Clips	No. 1	20.	Nickel	with	Black	Clips	14.00
Front—         No. 21. Black with Nickel Clips.         \$12.50           No. 22. Nickel with Black Clips.         14.00           Rear—         No. 121. Black with Nickel Clips.         12.50							
No. 21. Black with Nickel Clips				"]	Franklin	1."	
No. 22. Nickel with Black Clips	Front-						
Rear— No. 121. Black with Nickel Clips 12.50	No.	21.	Black	with	Nickel	Clips	\$12.50
No. 121. Black with Nickel Clips	No.	22.	Nickel	with	Black	Clips	14.00
	Rear-						
No. 122. Nickel with Black Clips 14,00	No. 1	21.	Black	with	Nickel	Clips	12.50
	No. 1	122.	Nickel	with	Black	Clips	14.00

### "Overland Four."

Front-		
	Black with Nickel Clips\$12.00	
	Nickel with Black Clips	
Rear—		
No. 191.	Black with Nickel Clips 12.00	
No. 192.	Nickel with Black Clips 13.50	
	un tin n	
	"Buick" Rear.	
No. 34.	Black with Nickel Clips\$12.50	
	Nickel with Black Clips 14.00	
	"Cadillac" Rear.	
No. 61.	Black with Nickel Clips\$15.00	
No. 62.	Nickel with Black Clips	
LY	ON CONVEX "CADILLAC" REAR.	
No. 161.	Black with Nickel Clips\$19.00	
No. 162.	Nickel with Black Clips 22.00	

### DEALER'S PORTABLE STAND.



A dealer's portable stand, which may be used not only for displaying all types of Lyon Bumpers, but may also be wheeled to the proper location in front of any car in the show room to illustrate its appearance on that car.

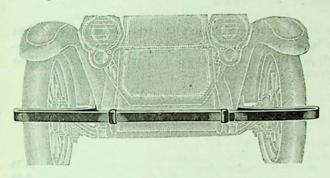
This stand will help dealers sell Lyon Bumpers. Write for our plan regarding its use.

Lyon Bumpers are approved by Insurance Underwriters.

10 per cent reduction on Collision Insurance for front Bumpers, 2½ per cent for rear.

### LYON STANDARD BUMPERS.

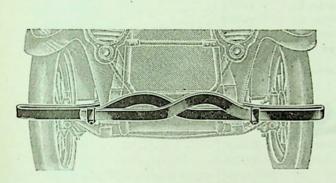
The Lyon Resilient Bumper is the finest development of Motor Car protection in the automobile field. Simply but scientifically built of the best spring steel, heat treated and oil tempered, its construction combines every feature of strength, resiliency, durability and distinctive appearance. With the "Three Way" or "New Way" fittings it is possible to make quick and rigid attachments to all cars without any alteration.



	Prices.
	Front, "Three-Way" Attachment.
Medium size	
No. 101.	Black with Nickel Clips\$12.50
No. 102.	Nickel with Black Clips 14.00
Large size-	
No. 104.	Black with Nickel Clips 14.50
No. 105.	Nickel with Black Clips 16.50
	Front, "Three-Way" Attachment.
Medium size	
No. 301.	Black with Nickel Clips\$13.50
No. 302.	Nickel with Black Clips 15.00
Large size-	
No. 304.	Black with Nickel Clips 15.50
No. 305.	Nickel with Black Clips

### LYON CONVEX BUMPERS.

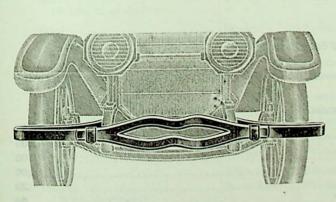
The Lyon Convex adds distinction and individuality and has the same strong serviceable qualities possessed by all Lyon Bumpers. Its broad bumping surface more fully protects the lamps and radiator in front as well as the gasoline tank in the rear.



	Prices.
	Front, "Three-Way" Attachment.
Medium size-	
No. 801.	Black with Nickel Clips\$17.00
No. 802.	Nickel with Black Clips
Large size-	
No. 804.	Black with Nickel Clips
No. 805.	Nickel with Black Clips 22.00
	Front, "New-Way" Attachment.
Medium size-	
No. 831.	Black with Nickel Clips\$18.00
No. 832.	Nickel with Black Clips 21.00
Large size-	
	Black with Nickel Clips 20.00
No. 834.	Nickel with Black Clips
	Rear.
Medium size	
No. 851.	Black with Nickel Clips\$17.00
No. 852.	Nickel with Black Clips 20.00
Large size-	
No. 854.	
No. 855.	Nickel with Black Clips 22.00

### LYON DREADNAUGHT BUMPERS.

The Lyon Dreadnaught Bumper is a custom built bumper of unmatched design and elegant appearance. It embodies every feature of strength and resiliency which has placed Lyon Bumpers in the forefront of known quality.

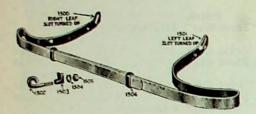


Prices.	
Front, "New-Way" Attachment.	
Medium size—	
No. 501. 21/8" Black with Nickel center	\$19.00
No. 502. 21/8" all Nickel face	
Large size—	
No. 504. 2%" Black with Nickel center	22.00
No. 505. 23/8" all Nickel face	24.00
Front, "New-Way" Attachment.	
Medium size—	
No. 531. 21/8" Black with Nickel center	\$20.00
No. 532. 21/8" all Nickel face	22.00
Large size—	
No. 533. 2%" Black with Nickel center	23.00
No. 534. 23/8" all Nickel face	25.00
Rear.	
Medium size—	
No. 551. 21/8" Black with Nickel center	\$20.00
No. 552. 21/8" all Nickel face	
Large size—	
No. 554. 2%" Black with Nickel center	23.00
No. 555. 2%" all Nickel face	25.00
Furnished with "Frame Clamp" Fittings only.	

Lyon Bumpers are approved by Insurance Underwriters. 306 P. C. In lots of 10 or more, 359 P. C.

10 per cent reduction on Collision Insurance for front Bumpers, 21/2 per cent for rear.

### THE LYON BUMPER PARTS "Three-Way" Attachment.



As the three-way attachment is applied with either edge up, the right sometimes becomes a left side, and in ordering the spring leaves first ascertain whether the slots are turned up or down as illustrated, and give the number of the part required.

#### Prices.

Nos.	1500-1501.	Black Steel Leaves, medium size. Each	\$5.75
Nos.	1500-1501.	Nickel Steel Leaves, medium size. Each	6.75
Nos.	1500-1501.	Black Steel Leaves, large size, Each.	7.20
Nos.	1500-1501	Nickel Steel Leaves, large size. Each	8.40
	1502.	Eye Bolts. Each	.36
	1503.	Bolt Sleeve. Each.	.23
	1506.	Front Clip, large or medium size, Black. Each	.90
	1506.	Front Clip, large or medium size, Nickel. Each	1.25

### THE LYONS BUMPER PARTS "New Way" Attachment.

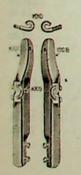


### Prices.

No.	1506.	Front Clip, large or medium size, Black	
No.	1506.	Front Clip, large or medium size, Nickel	1.25
Nos.	2000-2001.	Black Steel Leaves, medium size, 2-inch	6.00
Nos.	2000-2001.	Nickel Steel Leaves, medium size, 2-inch	7.00
Nos.	2000-2001.	Black Steel Leaves, large size, 21/4-inch	7.20
Nos.	2000-2001.	Nickel Steel Leaves, large size, 21/4-inch	8.40
No.	2002.	Steel Drop Forging, Right Side	1.25
No.	2003.	Steel Drop Forging, Left Side	1.25
No.	2004.	Tempered Steel Hook Bolt	.36

### THE LYON BUMPER-"Ford Parts."

Our New Pressed Steel Brackets, No. 1007 and No. 1008, can be used on any type of Ford Car, and do not interfere with Hassler Shock Absorbers.



### Prices.

No. 1006.	Front Clips, Black Finish	\$0.60
No. 1006.	Front Clips, Nickel or Brass Finish	1.00
No. 1007.	Right Bracket	2.00
No. 1008.	Left Bracket	2.00
No. 1009.	U Bolt	.22
No. 1010.	Eye Bolt	.38
	Steel Leaves, Black Finish	
No. 1014.	Steel Leaves, Nickel Finish	6.00

Lyon Bumpers are approved by Insurance Underwriters.

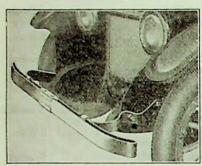
10 per cent reduction on Collision Insurance for front Bumpers, 21/2 per cent for rear.

### LYON BUMPERS ADAPTABLE TO 1922 MODELS.

NAME OF CAR	FRONT	REAR	NAME OF CAR	FRONT	REAR
Anderson	New-Way	Frame Clamp	*La Fayette	New-Way	Frame Clamp
(With snubbers)	ALL .		Lexington	3-Way	U-Bolt
Anderson	3-Way	Frame Clamp	Liberty	New-Way	U-Bolt
(Without snubbers)	Angle Bolt		(With snubbers)	2.11	TT D. II
*Apperson	3-Way	U-Bolt	(Without snubbers)	3-Way	U-Bolt
Auburn	5- Way	O-Boit	*Lincoln	3-Way	- 8
Briscoe	3-Way	Frame Clamp	*Locomobile	3-Way	
*Buick "6"	New-Way	Special	Locomobile	onay	
(With snubbers)	0.777	Ci-1	*Marmon	3-Way	
*Buick "6"(Without snubbers)	3-Way	Special	Maxwell	3-Way	Frame Clamp
Buick "44'	3-Way	Frame Clamp	Mitchell	3-Way	
	3-Way	Special	Moon	3-Way	Frame Clamp
*Cadillac	3-Way	U-Bolt			D CI
*Case	3-Way	U-Bolt	Nash "4" Nash "6"	Special	Frame Clamp
*Chandler	New-Way	U-Bolt	*National	3-Way	Frame Clamp Frame Clamp
(With snubbers)		O-Boit	National	3-Way	Frame Clamp
*Chandler	3-Way	U-Bolt	Oakland	New-Way	Frame Clamp
(Without snubbers)	2 11/	Caralal	(With snubbers)	3-Way	From Class
Chevrolet F. B	3-Way Special	Special Special	Oakland(Without snubbers)	5-way	Frame Clamp
Cleveland	3-Way	Frame Clamp	Oldsmobile 1922, "4"	Special	U-Bolt
*Cole	New-Way	U-Bolt	,	(See Foot-	
Columbia	3-Way	Frame Clamp		note No. 1,	
Commonwealth	3-Way	Frame Clamp	Oldsmobile, 1922, "8"	page 28) Special	U-Bolt
Crow-Elkhart	3-Way	Frame Clamp	Oldsmoone, 1922, G	(See Foot-	C-Boit
MISSELVE, MISSELVE, MISSELVE VISION			Million State and Control of the State of th	note No. 1,	
Dixie Flyer	3-Way		Oldsmobile, 1921	page 28)	TT Dala
Dodge Bros(With snubbers)	Angle Bolt (See Foot-	Special	Overland "4"	3-Way	U-Bolt Special
(With Shabbers)	note No. 2,	DI STREET, SALES	*Owen Magnetic	Special 3-Way	Special
	page 28)			o-way	
Dodge Bros	3-Way	Special	Packard Single "6"	3-Way	Frame Clamp
(Without snubbers)			*Packard Twin "6"	New-Way	Frame Clamp
*Dorris	New-Way	Frame Clamp	*Paige	3-Way	Frame Clamp
Dort*Duesenberg "8"	3-Way	Special	*Peerless *Pierce-Arrow	New-Way	
*Du Pont	New-Way New-Way	Frame Clamp	Pierce-Arrow	New-Way	
Durant "4"	3-Way	Frame Clamp	R. & S. Knight, 1922	New-Way	
Durant "6"	3-Way	Frame Clamp	Reo	3-Way	Frame Clamp
	The second second	77 D 1	C P 1		
Earl Elgin "700"		U-Bolt	Saxon-Duplex		P
		U-Bolt	Scripps-Booth	3-Way	Frame Clamp
Elcar	3-Way	Frame Clamp	*Standard "8" Stanley Steamer		U-Bolt
(With snubbers)	3-Way (See Foot-	Frame Clamp	Stanwood	Angle Bolt	Frame Clamp
( Trick Shapers	note No. 2,		*Stearns Knight		Frame Clamp Special
The same of the sa	page 28)	T	*Stephens	New-Way	U-Bolt
Essex(Without snubbers)	3-Way	Frame Clamp	(With snubbers)	Iven-way	C-Dort
	Tank Comment	MATERIAL STREET	*Stephens	3-Way	U-Bolt
Ford	Special	Special	(Without snubbers)		
Franklin	Special	Special	*Stevens-Duryea		
Gardner	3-Way	Frame Clamp	*Studebaker Big "6" *Studebaker Special "6"	New-Way 3-Way	U-Bolt U-Bolt
Grant	3-Way	Frame Clamp	Studebaker Light "6"	Special	Frame Clamp
*Handley-Knight	New-Way	Frame Clamp		(See Foot-	
*Haynes "75"	3-Way	Frame Clamp		note No. 1)	
Haynes "55"		U-Bolt	Templar	Angle Bolt	U-Bolt
*Hudson	3-Way	Frame Clamp	Velie "48"	3-Way	
Hupmobile	3-Way	Frame Clamp	Velie "58"	3-Way	Frame Clamp
Jackson	3-Way	Frame Clamp			
*Jordan	New-Way	Frame Clamp	*Westcott	3-Way	Frame Clamp
(With snubbers)	Tion it ay		*Wills-Ste. Clair	New-Way	U-Bolt U-Bolt
*Jordan	3-Way	Frame Clamp	*Willys-Knight(With snubbers	New-Way	O-Bolt
(Without snubbers)			*Willys-Knight	3-Way	U-Bolt
*King	3-Way		(Without snubbers)		
*Kissel	3-Way	Frame Clamp	*Winton	3-Way	U-Bolt

<sup>\*</sup>On front Bumpers indicates that the large size Bumper is recommended. Specify 21/4-inch when ordering.

# JWINBAR ISPRING-BUMPER



Combination Attachment



A Spring Bumper with double bars. Made with high grade spring steel two inches wide and 5-16 inch thick, heat treated and oil tempered throughout. The bar is not weakened at any point by the perforation of holes. The parts are held together with spring steel clamps. They will not rattle. The bar is five feet long, securely guarding the automobile front or rear.

### ATTACHMENTS

Adjustable Attachment fits 95 cars in front and 70 cars in rear.

Combination Attachment fits 29 cars in front. "Bolt-on" Attachment fits 22 cars in front. "Sure-on" Attachment fits 1 car in front

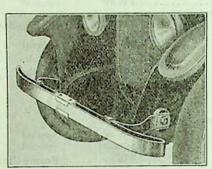
and 6 cars in rear.

Some cars take Special Attachments.

When ordering Twinbar Spring Bumpers be sure and specify the make and model of the car or cars on which they are to be used.

### **FINISH**

Every precaution and best methods known in electro-plating and enameling are used to obtain the most durable and pleasing finish that is possible. Twinbars come in two finishes: Nickel Plated Bar with Black Enamel Attachments, and Black Enameled throughout.



Adjustable Attachment

### INSURANCE REDUCTION

Twinbar Spring Bumpers are protection recognized by insurance companies for which they will substantially discount their collision insurance charges. In many instances the saving on first year's premium thus involved almost pays for the Bumper.

### PACKING

Twinbars are securely packed in separate substantial boxes insuring against damage to the finish when in transit. Approximate shipping weight, 37 pounds.

### ADVERTISING

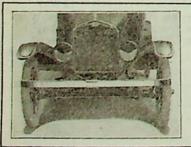
Twinbar Bumpers are persistently advertised in National Periodicals. Dealers will be supplied with envelope stuffers and circulars bearing their imprint on request.

### THE MANUFACTURER

Twinbar Spring Bumpers are made by the American Chain Company, Inc., manufacturers of Weed Tire Chains, Weed Spring-Bar Bumpers, Weed Chain-Jacks, American Towing Chains, Campbell Cotter-Pins, etc.

### PRICES

Size Bar, 2-inch, Black Enamel Finish, \$14.00 Size Bar, 2-inch, Nickel Plated Finish, 15.00 SizeBar, 1¾ for Ford, Chevrolet and Overland 4 Nickel Plated Finish, 12.00



#### TWINBAR BUMPER FOR FORD FRONT

An absolutely rigid attachment that is easily and quickly applied. It is first attached to the lamp bracket, securely wedged in by a U-bolt, and then fastened to the chassis with a bolt that is already in the frame. Designed to place the Bumper Bar closer to the road, thus adding to the appearance and efficiency. The entire Bumper is made of spring steel, 1% inches wide which greatly reduces its weight, and is designed so as to attach in an entirely rigid manner.

List price: Black Enamel, \$11.00; Nickel Plated, \$12.00

## Twinbar Spring Bumpers

### Motor Cars with Required Front and Rear Attachments

(Revised as of Feb. 1, 1922)

It will be noted that for many automobiles we can furnish two different attachments suitable for the front. The "first choice" is in every instance recommended. However, the second choice is a suitable attachment.

### **ATTACHMENTS**



Adjustable Attachment



Combination Attachment

The "Bolt-on" attachment is installed by drilling two holes in frame and bolting the arms to the frame.

The Adjustable with No. 1 Extension, is the same as the Standard Adjustable with the exception of longer arms. The No. 2 Extension is the same as Adjustable, but with longer arms than No. 1 Extension. Both are rear attachments and are made in suitable lengths allowing room in which to remove spare tires.

The "Sure-on" Attachment is the same as the Standard Adjustable with the exception of the Wedge Hook, which is larger to accommodate extremely thick frames.

			1 -			
	NAME OF CA	AR	Front 1st Choice	2d Choice	Rear	REMARKS
	Ambassador American Anderson Apperson Auburn		Adjustable Bolt-on Adjustable Adjustable Adjustable Adjustable	Bolt-on	Adjustable	
	Bay-State Brewster Buick 44, 45, 46 Buick 47, 48, 49 a	nd 50	Adjustable Combination Combination	Adjustable	Adjustable Buick Buick long	
	Brick 44, 45, 46 Buick 47, 48, 49 a Buick 654 Buick 34, 35, 36 a Bush		Combination Combination Adjustable	Adjustable	Adjustable Adjus. No. 2	No. 2 extension arm for rear
	Cadillae (Old Moo Cadillae 59, 51 Case Model V Case Model X	iel)	Adjustable Adjustable Adjustable	Combination Combination	Adjus, No. 2	No. 2 extension arm for rear
	Chandler Chevrolet 490		Combination Chevrolet fron t	Adjustable	Adjus No. 2 Sure-on No. 1	No. 2 extension arm for rear No. 1 extension arm for rear
	Chevrolet F. B. Cleveland Cole Columbia		Adjustable Adjustable Adjustable Adjustable Adjustable Adjustable Combination	Adjustable	Adjustable Adjustable	
	Comet Commonwealth Crow-Elkhart Cunningham		Adjustable Adjustable Combination Adjustable	Adjustable	Adjustable Adjustable Adjustable	
	Daniels Davis Delage		Bolt-on Adjustable Adjustable		Adjustable	
	Detroit Elec, 90 Detroit Elec, 93 Dixie Flyer Dodge		Bolt-on Adjustable Adjustable Adjustable Adjustable Adjustable Dodge front Bolt-on		Adjustable	
	Dorris Dort Origen Dupont Durant "4"		Adjustable Adjustable Bolt-on			
	Durant "6"		Durant 4 front Combination Adjustable		Adjus. No. 2	No. 2 extension arm for rear
	Elear Elgin K 1 Elgin "700" Essex		Bolt-on Combination Combination Adjustable	Adjustable	Adjustable	No. 2 extension arm for rear
	F. I. A.T. Ford Fox Franklin		Adjustable Ford front Bolt-on Franklin front		Adjustable Adjustable Franklin rear	MINISCHALL W. H.
7	Gardner Goodspeed Grant		Adjustable Adjustable Adjustable		Adjustable Adjus. No. 2	No. 2 extension arm for rear
	Handley Knight Hanson Hatfield		Adjustable Bolt-on	Bolt-on Combination	Adjustable Adjustable	Front adjus, for models without snub- bers, No. 2 extension arm for rear No. 2 extension arm for rear
	Haynes "55" Haynes "75" H. C. S. Hudson		Adjustable Adjustable		Adjustable Adjustable	No. ? extension arm for rear Front attachment mounted on top of
	Hupmobile Jackson Jordan		Adjustable Adjustable	Bolt-on	Adjustable Adjustable	Front adj. for models without snubbers No. 2 extension arm for rear
	Kelsey King Klasel Kline-Kar		Adjustable Bolt-on Adjustable Adjustable		Adjustable	Sale necture of views
	LaFayette Lexington Lark Lexington T	11777	Bolt-on		Adjustable	For cars with resr trunk specify No. 2 extension arm.
	Lexington S Liberty Lincoln Locomobile	******	Adjustable Adjus No 1 Combination Adjustable Bolt-on	Adjustable	Adjustable Adjustable Adjus. No. 2	No. I extension arm for front installa- tion No. 2 extension arm for rear
U	Lorraine McFarlan Majbohm	*****	Adjustable Adjustable Adjustable Bolt-on		Adjustable	PARTIES HOTEL HENGTHIN
	Marmon Maxwell Mercer		Combination Adjustable		Adjustable Adjus. No. 1	No. 1 extension for rear. Front in- stalled on top of frame Install on top of frame
	Milburn Mitchell Monroe Moon		Adjustable Combination Adjustable Adjustable	Adjustable	Adjustable	Install on top of frame
W	Nash ''4'' Nash ''6'' National Noma	1200	Nash 4 front Combination Adjustable		Sure on Sure on Adjus, No. 1	No. 1 extension arm for rear
-	Noma Onkland Ogren Oldsmobile 43		Adjustable Combination Adjustable	Adjustable	Adimetable	
	Oldsmobile 45 Oldsmobile 47 Overland "4"		Bolt-on Adjustable Bolt-on Overl'd 4 front		Adjustable Adjust No. 2 Adjus. No. 1 Adjus. No. 2	No. 2 extension arm for rear No. 1 extension arm for rear No. 2 extension arm for rear
Ч	Packard Single 6 Packard Twin 6 Paige 6-44 Paige 6-66		Adjustable Bolt-on		Adjustable	No. 1 extension arm for rear with two spare tires
	Pan-American Paterson Pierce-Arrow Pilot	13.200	Adiustable		Adjustable	of deliver no etaponic
1	Premier Rauch & Lang Ele Model 66	etrie	Adjustable		Adjustable Adjustable	remarka do a cu yar
	Renault Reo Revere Rickenbacker		Adjustable Adjustable Bolt-on Combination		Adjustable	Want Dissert use or
	Roamer Rolls-Royce R&V Knight 4 R&V Knight 6		Adjustable Adjustable Bolt-on		Adjus No. 2 Adjustable	No. 2 extension arm for rear
1	Rotary Sayers Saxon Duplex		Holt-on		Adjustable	No. 2 extension arm for rear.
	tandard tanley		Adjustable		Adjustable Sure on	
*******	Stephens Stevens-Duryea Studebaker Light Studebaker Specia Studebaker Big 6	6	Adjustable Adjustable Adjustable Adjustable Combination	Adjustable	Adjustable Studeb'r rear Studeb'r rear	
- 5	tudebaker Big 6 tutz	*****	Combination	Bolt-on	Studeb'r rear	
1	Vaux Hall Velie 48 Velie 58		Adjustable	Adjustable	Adjustable	
1	Vestcott A-44 Wills Sainte Claire Villys-Knight Vinton		Adjustable Bolt-on WillysK't front Bolt-on			No, I extension arm for rear
				***************************************	ARREST STREET,	

# SPRING-BAR



### CONSTRUCTION

The wide impact surface prevents single bar Bumpers of various heights from passing over or under, to inflict damage or to interlock. The front Bumper is full standard automobile tread width, the rear is longer, securely guarding the rear fenders, gas tank, etc.

### MADE IN TWO WEIGHTS

"Sturdy" Weed Spring-Bar Bumpers are made with high grade spring steel, 21/4 inches wide and 3/8 inch thick, heat treated and oil tempered.
"Safety" Weed Spring-Bar Bumpers are made of same high grade steel, 2 inches wide and 5-16 inches wi

inch thick to conform with medium weight cars.

### BRACKETS

"Sturdy" Weed brackets: N fits 93 cars in front; W fits 11 cars in front; REN fits 42 cars in rear;

REW fits 9 cars in rear.
"Safety" Weed Brackets: P fits 93 cars in front; X fits 11 cars in front; REP fits 42 cars in rear; REX fits 9 cars in rear.

Some cars take Special Brackets. When ordering Weed Spring-Bar Bumpers be sure and specify the make and model of the car or cars on which they are to be used.

### **FINISH**

Every precaution and best methods known in electro-plating and enameling are used to obtain the most durable and pleasing finish that is possible. Weed Bumpers come in three finishes: Full front nickel with enamel clamps; upper bar and clamps nickel; black enamel with nickel clamps.

### INSURANCE REDUCTION

Weed Bumpers are protection recognized by insurance companies for which they will substantially discount their collision insurance charges. In many instances the saving on first year's premium thus involved almost pays for the Bumper.

### **PACKING**

Each Bumper is packed in a single one hundred point cardboard carton, riveted at the ends and bound with three metal strips. Shipping weight: "Sturdy"—50 pounds; "Safety"—40 pounds.

### ADVERTISING

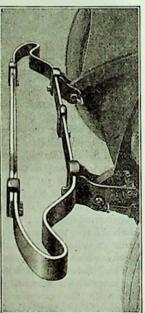
Weed Spring-Bar Bumpers are persistently advertised in such National Periodicals as Saturday Evening Post, Literary Digest, etc. Dealers will be supplied with envelope stuffers and circulars with their imprint on request. Stands will also be furnished with initial orders for three Bumpers on which to display Weed Bumpers in salesrooms, thus linking up with national advertising.

### THE MANUFACTURER

Weed Bumpers are made by the American Chain Company, Inc., manufacturers of Weed Tire Chains, Twinbar Spring Bumpers, Weed Chain-Jacks, American Towing Chains, Campbell Cotter Pins, etc.

### PRICES

STYLE	FINISH	PRICE
"Sturdy"	Black Enamel with Nickel Clamps	\$26.00
"Sturdy"	Upper Bar and Clamps Nickel	27.00
"Sturdy"	Full Front Nickel with Enamel Clamps	28.00
"Safety"	Black Enamel with Nickel Clamps	21.00
Safety"	Upper Bar and Clamps Nickel	22.00
"Safety"	Full Front Nickel with Enamel Clamps	23.00



# WEED SPRING-BAR BUMPER

Motor Cars with Required Front and Rear Brackets

(Revised as of Feb. 1, 1922)

Name of Car	Weed "Sturdy (2½ in. Be	"	Weed "Safety (2 in. Ba	" r)	Name of Car	Weed "Sturdy (2¼ in.Ba	" (r)	Weed "Safety" (2 in. Bar)		
	Front Bkt.	Rear Bkt.	Front Bkt.	Rear Bkt.		Front Bkt.	Rear Bkt.	Front Bkt.	Rea Bkt	
Ace	222	nest	P	nen	Kissel	W	15	X	1	
Allen	N	REW	P	REP	Kline Kar	LaFayette		LaFayette		
merican	N		P		Year Transmitter	Front Sturdy	1	Front Salety		
nderson	N	REN	P	REP	Lexington	Lexington Front Sturdy N N	REN	Lexington	REI	
pperson	N	REN	P	REP	I Donto	Front Sturdy	REN	Front Safety P	RE	
lav State	N	KEI	P	ILL.	Liberty	N	1	P	1	
Apperson	N		P		Lorraine	N		P		
luick 44, 45, 46	N	1	P		Maibohm	N	REN	P	RE	
uick 47, 48, 49, 50	N		P		Marmon	N	REN	P	RE	
Buick 34, 35, 36, 37	N	REN	P	REP	*Mercer	w	1	X	1	
Buick 34, 35, 36, 37 adillac (old	1 1 1 1 1 1 1	-		10000	*Mercer Milburn Electric	T	1	P P P X S P		
models)	Cadillas	M.	Cadillac		Mitchell	N	REN	P	RE	
models)	Front Sturdy		Front Safety		Nash "4"	**	REN		REI	
ase. Model V	N	REN	P	REP	Moon Nash ''4" Nash ''6" National	N	REN	P	RE	
	N		P		National.	National	REW	National Front Safety	RE.	
Chalmers	ZZZ		P		Noma	Front Sturdy	REN	Pront Safety	RE	
handler F. B	N		P	1 1	Oakland	N N	REN	P	RE	
leveland	N	REN	P	REP	Ogren	N	REW	P	RE.	
Cole	Cole	REW	Cole	REX	Oldsmobile 43	77		P		
olonial	Front Sturdy	1 1	Front Safety		Oldsmobile 46	N		P	1	
olumbia	N	1	P		Oldsmobile 47 Packard Single Six.	Packard S-6		Packard S-6	1	
.omet.	N		P			Front Sturdy	-	Front Safety		
ommon wealth	zzzzzzz	REN	P	REP	Packard Twin Six.	Packard T-6 Front Sturdy		Packard T-6 Front Safety		
rawford	N	REN	P	REP	Paige 6-44	N N	1	P	1	
unningh am	w	KEI	X	ICLS.	Paige 6-66 Pan-American	Z		P		
Daniels	N		P		Pan-American	N		P	1	
Davis Detroit-Electric 90.	N	REN REN	P	REP	Paterson	N		Y	1	
Detroit-Electricoa		REN	-	REP	Pilot	N	REW	P	RE	
Detroit-Electric 93.	N		P		Premier	77	1	P		
lodge	N		P		Renault.		nmi	P Reo	ne	
Porris	N		P		Reo	Reo Front Sturdy	REN	Front Safety	RE	
Oorts	77 77 77 77 77 77 77 77 77 77 77 77 77		P		*Revere	T		S		
Origgs			P		Rickenbacker	N		P		
OuPont	N N		Durant 4		Roamer	N	1	PP	-	
Origgs	Front Sturdy		Front Safety	1	Roamer R & V Knight 4 R & V Knight 6	N N T T		S		
	N		P		Rotary	Ť	W	S	X	
ALI	N	REN	P	REP	Savers	W	REW	X	RE	
lcar	N		P		Saxon Duplex Scripps- Booth	N	REN	P	RE	
lgin "700"	N	1	P	100	Seneca	N	ILE.	P	ICLS!	
Igin K-I Elgin "700" Essex I. A. T	N	REN	P	REP	Skelton	2222222		SSXPPPPPP	l	
. I. A. T	N		P	REP	Standard Stanley	N	REN	P	REI	
ox	N	REN	P	REP	Stearns	ŵ	0 0	X		
ardner	N	REN	P	REP	Stephens	N		P		
Handley - Knight	N	REN REN	P	REP	Stevens-Duryea	N	nest	P	n	
Handley - Knight	N	100	P	REP	Studebaker Light 6 Studebaker Special		REN	P	REI	
latfield	N .	REN	P	REP	6	N	REW	P	REX	
laynes "55"	w	REW	X	REX	Studebaker Big 6 _	N	1	P		
latfield	W		X	1 1 1 1 1 1	Stutz	N		P		
I. C. S	N	REW	PPPPXXPPXXPP	REX	Vauxhall	N	1	P		
luffman	N	REN	P	REP	Velle 48	N	1	P		
Iupmobile	N	REN	P	REP	Velie 58	N	REN	P	REF	
tala	N		P	DEN	Washington	ZZ	1	P		
ordan	N N	REW	P	REX	Westcott A-44 Wills Saint Claire.	Wills Saint Claire	REN	Wills Saint Claire	REE	
Celsey	222222382222222222222222222222222222222	REN	P	REP		Front Sturdy	1	Front Safety		
celsey	N	REN	P	REP	Willys-Knight	N W		P	DE	
Cing	N		P		Winton	W	REW	X	RE	

\*Signifies a special front bumper bar is used to make this installation.

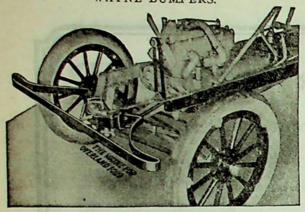
Weed Brackets are installed without interference with snubbers or shock absorbers as the cars come from the factory.



Weed Brackets Nand W, Pand X

So securely are these rugged fittings attached that the brackets and bumper become practically integral with the car

### WAYNE BUMPERS.



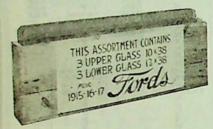
For Overland 4. Model Front.

Attached in six minutes, is flexible and requires no drilling of holes. Bumper clears the pan and fenders so there is no rattle.

 Price, each, nickel rail, black fittings.
 7257
 \$10.00

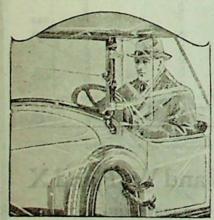
 Price, each, all black f.
 7253
 10.00

### GLASS FOR FORD WINDSHIELDS.



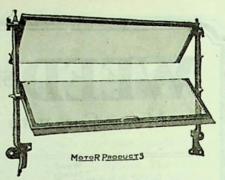
Specify year and model of car.	
Top glass. Size, 10x38 in. Each 2504	\$ 3.00
Bottom glass. Size, 12x38 in. Each 2757	3.50
Packed 3 sets to box, 3 top and 3 bottom.	
Per box12454	19.50
Packed 6 upper in box. Per box	18.00
Packed 6 lower in box. Per box	21.00
Packing for shipment, extra, 50c and up.	

### ORIGINAL WIND GUARDS.



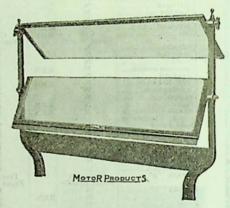
Protect you and your passengers from cold, wind, rain, dust and dirt. Installed in five minutes on any car. Do not interfere with top, spotlight or curtains. The heavy glass, with polished edges, is held by clamps and is not weakened by holes in it. They are made from heavy brass castings, finished in heavy nickel. Packed one pair in corrugated container. In ordering give make of car, model and year.

#### WINDSHIELDS.



MODEL Z-17 COMPLETE FOR FORD CARS.

This is a high-grade complete windshield for Ford cars, ready to attach—simply take off the old shield and put on the new. It has the Rainvision and Ventilating features which add so much to your safety and comfort while driving. The combination of top studs and strap loops enables you to use either the regular Ford top anchor straps or pressed steel top fasteners which can be supplied at an extra cost.



### MODEL No. 100 WITH FILLER BOARD FOR FORD DELIVERY CARS AND TRUCKS.

Constructed of heavy gauge steel to meet the demand for an up-to-date windshield that will stand hard usage. The upper pivot is of ball lock construction and the lower cone friction.

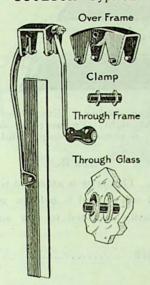
No. 100. Windshield and Filler Board. List......\$18.00 No. 100. Windshield, With slip dash. List.......21.50



254 P. C.

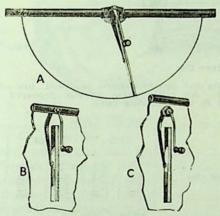
### OUTLOOK WINDSHIELD CLEANERS.

OUTLOOK-Type SE



One Cleaner-3 Mountings

### OUTLOOK WINDSHIELD CLEANER Type SE



Same cleaner attaches three ways. (A) Over-theframe attachment; (B) Thru-the-frame attachment; (C) Thru-the-glass attachment. Brass stock. Nickel finish.



Counter display carton will sell cleaners. Type SE packed in attractive carton and each dozen packed in display carton for use on dealer's counter. Standard shipping package 6 display cartons. Approximate weight 48 pounds. Price, each \$2.00

256 P. C. Dozen lots 351 P. C.

### PRESTO-FELT WINDSHIELD CLEANERS.

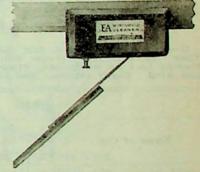


Standard Model.

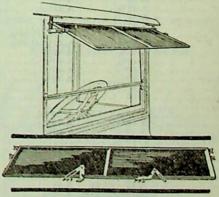
The chemically treated felt pads keep the glass crystal clear for hours after a single thorough wiping. Fits any car; no rattle; can't loosen. Guaranteed for mechanical perfection and chemical properties of felt. Twin pads of chemically treated felt for both sides of the glass. Outside pad prevents gathering of rain, mist or snow; inside pad keeps glass clear of dust, steam and frost. Adjustable feature permits large cleaning surface. All parts needed for any installation: over top of frame, bolted through frame and through glass, are included in each carton. Silent salesman sent with orders for one dozen or more. Price, each. \$2.00 256 P. C. Dozen lots 331 P. C. Two-dozen lots 407 P. C.

### EA ELECTRIC WINDSHIELD CLEANERS.

Uniform speed, positive operation. Requires a minimum of current consumption and does not interfere with the electrical equipment. When not operating it is entirely disconnected from the electrical equipment by means of a convenient cut-out switch, wound for 6 volts. Finish all black. Full directions with each cleaner.



### McKINNON VISORS.



Strong, electrically welded frame; neatly covered, upper side with black, lower side with green artificial leather. Adjustable to any angle; attaching brackets, with slotted screw-openings to permit adjustments, and Japanned.

Suitable to cars of open or closed body design. 10½ inches wide over all. Frames all one piece. Average weight of visor 3¾ pounds

visor 3% pounds.

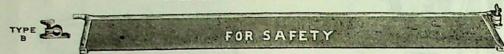
No. 5. Black Grained Art Leather. Each....2256 \$5.00

To determine length required measure extreme width of windshield.

### HOWE ALL-WEATHER SHADES.



PATENTED JULY 19. 1921. OTHER PATENTS PENDING



Rust-proof, will outlast your car. Transparent glass in three colors, blue, green, amber. Gives the driver a clear vision at all times, eliminating the blinding glare of the sun and headlight glare at night. Frame made of polished aluminum with heavily nickel plated brass fittings. Very light in structure. Weight, 6 pounds. Simple and easily adjusted to car.

Type A.

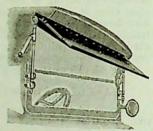
Attached to the top of windshield frame, adjusted to any angle by means of two thumb screws. This type will fit all open cars where a half inch space can be obtained between the top of car and top of windshield frame.

Type A. Price, each	\$12.00
Display Stands, Ford. Each	1.50
Display Stands, Closed Cars. Each	1.00
Universal Assembly. Each	.25

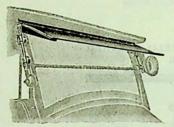
Type B.

Same as Type A. This type is attached to the body of car by means of wood screws and is held in position by two thumb screws. Easily adjusted to any angle. Length 43 inches.

### L. B. & G. STAY PUT VISORS



Ford Open Car.



Large Open Car.

32-oz, high-grade, dyed, fast colored, green coated Fabric Visor. Eave trough prevents water running down Visor and blowing back on windshield. Storm bib at top shuts out water and wind. Easily attached and adjusted to any desired posi-

tion. All nuts and screws, where practical, are of brass and nickel-plated. All other parts heavily coppered and nickel-plated. Will fit the following cars:

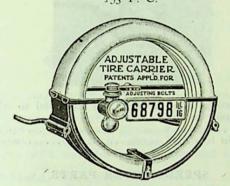
Name of Car	2	D-40½ ( A-42½ (	Closed Wodels C-391/2 C-401/4	A-45 A-421/2 A-421/2 D-401/2	C-421/2	Name of Car  Kline. Lexington Liberty. Marmon Maxwell. Mitchell Moon Nash '6' Nash '4' National	slappoW A-421/2 D-421/2 A-421/2 A-421/2 A-401/2 A-401/2	C-45 C-421/2	Model A-421/2		Nodels Wodels	Closed
Auburn         A 421           Briscoe         D.394           Buick "4"         A 391           Buick "6"         A 423           Cadillac         D 45           Case         A 423           Chalmers         A 45           Chandler         A 45           Chevrolet "450"         D 460           Chevrolet "F. B."         A 423           Cleveland         A 423	C-42½ A	D-39 1/2 A-42 1/2 A-45 A-42 1/2 D-40 1/2 A-42 1/2	C-39 ½ C-404	A-42½ A-42½ A-45 A-42½ A-42½ D-40½	C-42½	Lexington Liberty Marmon Maxwell Mitchell Moon Nash "6" Nash "4"	D-42½ A-42½ D-45 A-39½ A-42½ A-42½ A-40½	C-45 C-421/2	A-421/2		A-421/2	
Columbia         A-40           Crow-Elkhart         A-393           Cunningham         Daniels           Davis         D-45           Davis         A-233           Dodge         A-421           Dort         A-460           Earl         D-403           Elcar         A-422           Elgin         A-339           Essex         D-404           Ford         F-405           Franklin         A-45	C-401/2 C-401/2 C-45	A-39½ A-42½ A-40½ D-40½ F-40½ A-39¼ A-45 A-40½ A-40½ A-40½ A-40½ A-40½		A-42¼ A-40¼ A-39¼ D-45 A-39¼ A-40¼ A-40¼ A-40¼ A-40¼ A-40¼ A-40¼	C-40½	Oakland. Oldsmobile. Overland. Packard. Paige. Paterson. Peerless. Pierce-Arrow. Premier. R. & V. Knight. Reo. Sayers. Saxon. Scripps-Booth. Seneca. Stearns. Stephens. Studebaker '4' Studebaker Sp'1 "6" Studebaker Sp'1 "6" Studebaker Big "6" Stutz. Templar. Velie. Westcott. Willys-Knight.	D-42½ A-40½ A-42½ A-39½ A-42½ D-45 D-42½	C-381/2 C-421/2 C-421/2 C-391/2	A-42½ A-45 D-45	C-381/2	A-40½ A-40½ A-42½ A-42½ A-45 D-45 A-42½ A-40½ A-40½ A-42½ A-42½	C-381

### SIMPLEX AND DUPLEX ADJUSTABLE TIRE CARRIERS.



Running Board or Side Carriers.

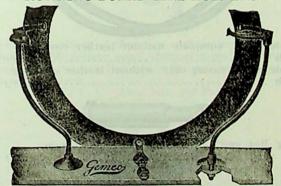
F	or	Ford	or Chevr	olet 490:		Rich of solet mysel	
	31/2	-inch	Simplex	Adjustable.	Price,	each\$4.00	
	4	-inch	Simplex	Adjustable.	Price,	each 4.50	
	31/2	-inch	Duplex	Adjustable.	Price,	each 5.50	
	4	-inch	Duplex	Adjustable.	Price,	each 6.00	
				152 P	C		



Rear Carriers.

For Ford or	Chevrolet 4	190.		
With necessar	ry attachm	ents and di	rections:	
3½-inch Sin	nplex Adjus	stable. Prie	ce, each	\$6.50
4 -inch Sin	nplex Adjus	stable. Pric	ce, each	7.00
3½-inch Du	uplex Adjus	table. Pric	e, each	8.50
4 -inch Du	aplex Adjus	table. Pric	e, each	9.00
		156 P. C.		

### RUNNING BOARD TIRE HOLDERS.



This Tire Holder bolts through the running board. It is a very substantial proposition. Will carry either one or two tires, as the terminals are hinged.

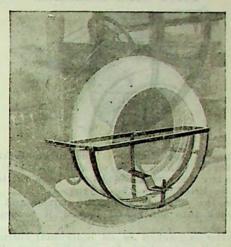
No. 45. For 4-inch tire, complete, with straps, Japanned: 

For Ford Cars.

Made for one tire only. Japanned. No. 14. Complete, with Straps:

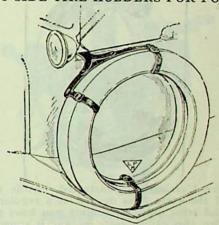
Price, per set......\$2.80

HASTINGS TIRE CARRIERS FOR FORD TRUCKS.



Made exceptionally strong for strenuous service such as a delivery truck gets. Black enamel. Equipped with thief-proof locking device. Will carry 1 32x4½ tire or rim and 1 30x3½ tire or rim or 1 33x5 tire or rim and 1 30x3½ tire or rim. Price, each 356 P. C. Doz. Lots, 401 P. C.

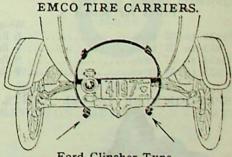
### HALLADAY SIDE TIRE HOLDERS FOR FORD CARS.



For 1915 and later Ford Cars.

This Tire Holder will hold perfectly one or two tires. Suitable for demountable rims or wheels. Price, with Strap, complete: Each ..... ..... 1164 \$1.60 Price, with Strap, complete, in lots of 10 to 49: Each Price, with Strap, complete, in lots of 50 or more:

1.60



Ford Clincher Type.

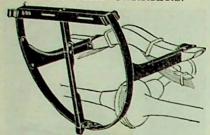
Tire may be removed by simply lifting it forward, thus compressing the carrier ring and allowing the tire to be slipped forward and free from the carrier. Built of high-grade steel stampings; great strength; minimum weight. Shipping weight, 10 lbs.

Packed one in carton, with necessary instructions. No. FD1. Double Clincher. One 30x3 and one 30x31/2. Price, each ...

254 P. C. In lots of 6, 407 P. C. 253 P. C.

Each ....

EMCO TIRE CARRIERS.



Ford Demountable Type.

The feature of the Carrier is the toggle locking device. When the toggle (which is very easily operated) is pushed forward the tire will swing toward you from the bottom and may then be lifted from the carrier.

When the tire is replaced on the carrier and the toggle is drawn back into place and locked, it makes theft im-

possible.

Each Carrier is packed in an individual corrugated container, with full instructions for installing and all necessary hardware for the purpose.

F. D. 4. Double Demountable for Fords...... 254 P. C. In Lots of 6, 409 P. C.

2 R 3 TIRE CARRIERS.



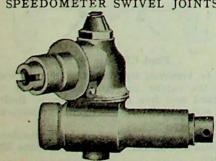
These Tire Carriers, as illustrated, enable the motorist to carry all the extra tires desired as a regular proposition or for special trips only. Assuming you have provision for one extra tire, this carrier rests on, and is supported by tire No. 1, it in turn will support tire No. 2 and No. 2 will support another carrier for tire No. 3, etc. Thus, as many tires as desired may be carried, all strapped to tire No. 1.

The construction of these carriers is such that they may be disassembled and packed away in comparatively small

The cradle sections fit about one-quarter of the circumference of tires. The wide suspension bar is provided with a series of holes to receive the two narrower bars, thus allowing adjustment of any size tires.

Orde	r by			Pr.	ices for Model S.		
No						Weight.	
S31/2	for	3½x30	to	33	tires	6 lbs.	\$2.50
S4	for	4 x32	to	35	tires	7 lbs.	3.00
S41/2	for	41/2x34	to	37	tires	8 lbs.	3.50
					tires		4.00
					337 P. C.		

SPEEDOMETER SWIVEL JOINTS.

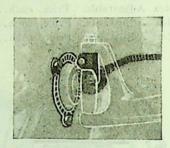


Right or Left Hand. Price, each............1853 \$3.00

A-C SPEEDOMETERS FOR FORD CARS.



A magnetic instrument, fully jeweled, registering 70 miles per hour, 100,000-mile total register and 100-mile trip, registering tenths and resetable. Black face with white figures. Rim of solid brass, nickeled. Complete with driving shaft, gears and attachments. Full directions with each outfit.



Showing Crown Road Wheel Gear attached to wheel. No special holes to drill. Price, each ..... Price, each, in lots of 5......10006 15.00

### SPEEDOMETER PARTS.

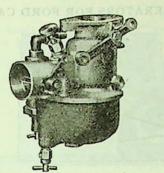


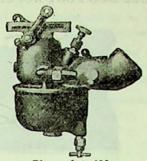
Flexible Shaft, complete without leather covering. Each	\$4.50
Each2003	3.00
Sliding Bar and Lower End Clutch of Chain.	
Price, each	\$0.25

				23117		
Upper	End	Clutch	of	Chain.	Each108	\$0.15
				in only	in the theen time, com	

Flexible Shaft Chain.	Per foot163	\$0.25
	or Small Fiber Gears	\$0.35

### KINGSTON CARBURETORS.





Chevrolet Baby Grand. Chevrolet 490.

These carburetors have been tested under the severest weather conditions. They have met every test. They do not have to be adjusted with every change of the weather, for climatic conditions and changes do not affect them. Simple in construction, efficient and economical in operation. Chevrolet Baby Grand—Equipped with new idea fuel

strainer and separator. Price, each......\$12.50 Chevrolet Model 490. Price each, with strainer..... 12.50 331 P. C. Doz. lots, 404 P. C.



Gives increased power with lower fuel consumption. Handles high or low test gas with equally successful results. Picks up instantly under load without choking. Gives greater ease in starting and increased flexibility and smoothness in the operation of the motor.

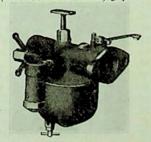
Equipped with new-idea fuel strainer and several added features Maxwell Model. Price, each.....

253 P. C. Doz. lots, 304 P. C.



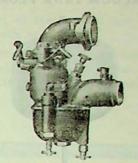
Buick.

Solves the problem of thorough carburetion for the Little Six Buick. Will deliver every atom of power and punch in the fuel to the motor. Increase in mileage per gallon. 



Ford Model L-4-K.

Specially designed for Ford users. Carries many exceptional features, including a gasoline strainer and integral part of the device.

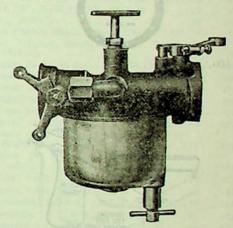


Dodge.

It breaks even the poorest gasoline into the most minute particle and thoroughly mixes these particles with air; this means thorough mixture and complete vaporization. Simple to adjust and once adjusted to the motor requires no further attention. Equipped with new-idea fuel strainer and

Dodge. Price, each......\$15.00 256 P. C. In doz. lots, 307 P. C.

### HOLLEY CARBURETORS FOR FORD CARS



Model for Ford T Cars.

Has very few working parts, resulting in minimum wear and extreme simplicity of operation. 

### HOLLEY CARBURETOR FLOATS.



No. 4451A. Holley floats. Each......\$0.50 No. 6201.

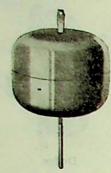
### KINGSTON CARBURETOR FLOATS.



Kingston floats. Each.....

251 P. C.

### VACUUM TANK FLOATS.



Replacement on standard vacuum tanks. It has great buoyancy, long life and will not leak. Standard package, 12 in box. Weight, each, 4 ounces.

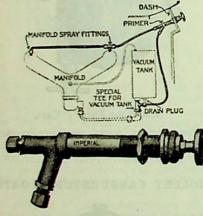
### VACUUM TANK GASKETS.



Price, per 100.....\$3.00

254 P. C.

### IMPERIAL PRIMERS.



Does away with use of choker and saves your motor bearings and cylinders. Saves storage battery the year around, saves gasoline, saves yourself.

Every primer now has self-closing plunger pump. One or two shots starts your motor. Merchandising display case, containing two standard and two Ford special outfits.

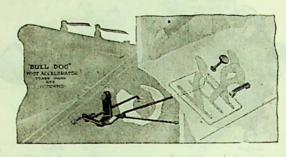
203 P. C. In lots of 4 256 P. C. In dozen lots 300 P. C.



Restores compression, increases power, stops oil pumping.

Are placed under Piston Rings.

### BULL DOG FOOT ACCELERATORS FOR FORD CARS.



Why not get Greater Efficiency, More Economy and Better Control by driving your Ford with a "Bull Dog" Foot Accelerator?

All parts are made of the very best material. The Foot Rest which goes with every Accelerator makes it easy to hold throttle steady over the roughest roads.

It is simple in construction and easy to install.

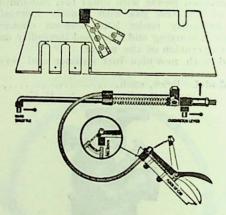
The hand control works independent of the foot control.

Should you desire to remove floor boards you can do so by unscrewing button on foot pedal.

 Price, each
 859
 \$ 1.50

 Price, per dozen
 9003
 18.00

### WILLIAMS' ACCELERATORS FOR FORD CARS.



Foot throttle quick connections, with only three connections. Complete instructions on every box.

Model A. Long Pedal. Price, each..................1857 \$3.00

## FLOOD WATER CIRCULATING PUMPS FOR FORD CARS.



Gives you the steady, easy flow of power and old-time pickup, real lubrication, efficiency and economy for the powerful suction. Screw propeller begins turning the instant your motor starts. Fits any Ford model since 1916, furnished with oil proof belt and does not interfere with accessibility to any part of motor. Price, each......3502 \$5.00

### SPENCER AXLES AND DRIVE SHAFTS

are trade-marked "Spencer" and are guaranteed to be a 100 per cent replacement of the original part. This guaranty is made possible by the use of Chrome Molybdenum Alloy Steel, scientifically heat treated.

Each axle is rigidly inspected for every machining operation. There are no tool marks on the radius bearings, no burrs on the edges of the keyways, no poorly cut threads, and no rough ground bearing surfaces. There isn't a more accurately machined part put into a car by the manufacturer than the axles we sell for replacement.

All axles are oiled to prevent rusting before packing.

	. In or the energy ledy work a moderate	HIO I I	Per		and a community of		
€	SPENCER)	(MI)		-	SPENCER	IS-1	3
	against 2000 of an inch deep, next	3174			O assessed No lo Hal strong that some		
Code	Name No.	Wt. Per	Each	Code	Name No Per		D- 1
Code	Case			code	Name Per Case		Each
EN-1	Allen, 32-37-41, 1916-1910	115	\$6.40	EN-4	Elgin Pinion Shaft, 1643-A, 1916-1710	34	9.80
GT-5	Allen, 1920-2110	112	7.50	EX-1	Essex, 1918-2110	160	8,60
AN-1	Apperson, 1915-21, Right10	160	8.30	FD-1	Ford 56" Tread	215	1.90
AN-2	Apperson, 1915-21, Left10	150	8,30	FD-2	Ford 60" Tread25	235	2,60
DS-1	Auburn, 1915, Right	117	9.00	FD-3	Ford One Ton Truck10	165	9.80
DS-2	Auburn, 1915, Left	145	8.30	FD-4	Ford Drive Shaft, Model "T"10	145	4.50
AB-1 AB-2	Auburn, 6-40A, Left10	122	8.30	FD-5 DT-2	Ford One Ton Truck Drive Shaft10 Gardner, 1919-20	270	13,50
DS-3	Auburn, 1917-1910	115	7,50	GT-4	Grant "M", Square Ends, 1915-1610	105 94	6.50
EN-3	Auburn, 10 Spline, 1919-21	130	8.30	GT-1	Grant "6", V-K-G-GX, 1917-1910	83	5.40
BE-1	Briscoe, 4-24, 1917-2110	98	8.30	GT-5	Grant, 1920-21	112	7.50
BK-1	Buick, B36-37-38, C36-37, 1914-15,	100	7.50	GT-2	Grant Pinion Shaft, Small Taper, 1917.10	30	3.20
DYF 0	Right	168	7.50	GT-3	Grant Pinion Shaft, Large Taper,	1000	
BK-2	Buick, B36-37-38, C36-37, 1914-15, Left	150	7.50	TTO 1	1918-20	30	3.20
BK-3	Buick, 10-32-33-34-35-3610	110	6.00	HS-1 HS-2	Haynes, 34 to 44 inc., 1916-18, Right. 10	180	7.50
BK-4	Buick, D-E-H-K-44-45-46-47-49-50,			HS-3	Haynes, 34 to 44 inc., 1916-18, Left10 Haynes, 45-46, 1919-20, Right10	150 178	7.80
	1917-2110	130	6.00	HS-4	Haynes, 45-46, 1919-20, Left10	148	7.50
BK-5	Buick, 21-25-28-29-30-31, Right10	145	6.80	HN-1	Hudson Super-Six, 7-0, 10-0, 192010	150	10.50
BK-6	Buick, 21-25-28-29-30-31, Left	130	6.80	BK-3	Hudson, 4 Cyl., "20"10	110	6.00
BK-7	Buick, B24-25, C24-25, EX24-25, 1914- 15, Right	130	6,80	HN-3	Hudson 37, Square Ends, 1912-13,		
BK-8	Buick, B24-25, C24-25, EX24-25, 1914-			HN	Right	110	9.00
	15, Left10	120	6.80	HN-4	Left10	102	9.00
BK-9	Buick, B54-55, C54-55, 1914-15, Right10	190	6.80	HN-5	Hudson, 6-54, 1914-15, Right10	127	9.00
BK-10	Buick, B54-55, C54-55, 1914-15, Left10	170	6,80	HN-6	Hudson, 6-54, 1914-15, Left	115	9.00
BK-11 BK-12	Buick, 3-4, C4, D4, Right	170 160	7.20	HE-1	Hupmobile, R1-2-3, 1917-2110	115	6.00
BK-12	Buick, D54-55. 1916, Right	193	7.50	HE-2	Hupmobile "N", 6 Spline, 1916-710	165	9.00
BK-14	Buick, D54-55, 1916, Left	170	7.50	SS-3	Lexington, 6-0, 191710	125	7,10
OA-1	Buick, D34-35, E34-35, B35, DX34-35,			CS-3	Liberty, 10-A, 1916-1710	125	8.60
	1916-1810	103	5.30	EX-1	Liberty, 10-B, 10-C, 1917-2110	160	8.60
CE-2	Case, 1919-2010	142	9.80	ML-1	Maxwell "25", 1914-19, Right10	95	3.00
HN-3	Chalmers, 30, 1912-13, Right	110	9.00	ML-2 ML-3	Maxwell "25", 1914-19, Left	95	3.00
HN-4	Chalmers, 30, 1912-13, Left	102 127	9.00	ML-4	Maxwell "25", Drive Shaft, 1918-1910	145 155	5,30
HN-5 HN-6	Chalmers, 24-26, 1914, Right	115	9.00	ML-5	Maxwell "25", 1920-2110	95	3.00
CS-1	Chalmers, 6-30, 35-B, 35-C, 5 or 7	110	2,00	MI-1	Mitchell, C42-M7-42, Splined Both		5.00
	Pass., 1919-2110	165	8.60	-	Ends10	140	9.00
CS-2	Chalmers, 26-B, 191510	118	9.00	MI-2	Mitchell, D40, Splined, 1917-18, Right.10	120	6.00
CS-3	Chalmers, 6-30, 35-A, 1916-1810	125	8,60	MI-3	Mitchell, D40, Splined, 1917-18, Left10	118	6.00
CR-1	Chandler, 1¼", 1914-1710	125	6.30	MI-4	Mitchell D40, Square, 1916-17, Right10	120	5.60
CR-2	Chandler, 1%", 1917-21	140 45	6,80 7,50	MI-5 OA-1	Mitchell, D40, Square, 1916-17, Left10 Oakland, 1916-17-18-20	120	5.60
CR-3 CR-4	Chandler Pinion Shaft, 1916-1910 Chandler, 1913-14, Short Taper10	140	6.90	OD-1	Overland, 69-79-80-81-83, Right10	125	5.40 4.50
CT-1	Chevrolet, 49025	210	2.60	OD-2	Overland, 69-79-80-81-83, Left10	125	4.50
CT-2	Chevrolet Baby Grand, 1914-1710	115	5.60	OD-3	Overland, 85-4, 85-6, Right10	133	4,50
CT-5	Chevrolet Drive Shaft, 490, 1915-2110	154	5.80	OD-4	Overland, 85-4, 85-6, Left	127	4,50
CD-1	Cleveland, 6-41, 1920-21-2210		8.60	OD-5	Overland, 90, Touring, Right10	115	4,50
EX-1	Columbia, 1917-2110	160	8.60	OD-5B	Overland, 90B, 90BT, 1917-1819	130	4.50
GT-1	Crow-Elkhart, Turned Center10	83	5.40	OD-6	Overland, 90, Touring, Left	105	4.50
DE-1	Dodge	105	3.30	OD-7 OD-8	Overland, 75-90, C. C., 90R, Right10	90	4,50
DE-1 DT-1	Dodge Truck Shaft, ½ Ton, 1917-2110 Dort, 1916-19	105	3,30 6,00	OD-9	Overland, 75-90, C. C., 90R, Left	85 88	4.50
DT-2	Dort, 1920	105	6.50	SN-1	Saxon "6", 1916-1810	100	3.30 8.30
DT-3	Dort Drive Shaft10	165	13.50	SN-2	Saxon "6", 1919-2010	100	8.30
EN-1	Elcar, "E", 1916-1710	115	6,30	SN-3	Saxon "4"10	100	4,10
EN-2	Elcar, 6 Spline Both Ends, 1917-2010	95	6.00	SR-1	Studebaker, 4 & 6 cyl., 1914-1810	127	4,80
EN-4	Elcar Pinion Shaft, 1916-1710	34	9.80	SR-2	Studebaker "Special"10	165	6.80
PE-2	Elcar, 1920-2110	140	7.50	SR-2	Studebaker "Big Six"10	165	6,80
EN-1	Elgin, 6 Spline, 1917-19	115	6.30	SR-3	Studebaker "Light Six"	160	8.30
EN-2 EN-3	Elgin, Splined Both Ends, 1917-1810	95	6,00 8.30	CS-3 EX-1	Velie, 27-28, 1917	117	8.60
Elden	Elgin, 10 Spline, 1919-2110		0.30			160	8,60



Have a 45-degree angle groove full of oil between the ring and the cylinder wall, which pulsates as the piston moves up and down. This pulsation keeps a film of oil between the ring and cylinder wall, regardless of the warped or worn places on the cylinder wall.

### How No-Leak-O Rings Are Made-Important.

Made from a special formula of close-grained tough gray iron, a few points softer than proper cylinder metal. Concentric, accurately finished. Individually cast, retaining on the inside the skin of the casting, which insures long life and lasting resiliency.

### Coal Oil Injurious to Lubrication.

By reversing the top ring (groove part up) the coal oil that is in gasoline, attempting to pass, is trapped in the groove. On the firing or power stroke it is drawn into the heated firing chamber. It will then be exploded into power, or go out the exhaust pipe-not down into the oil pit, to injure lubrication.

We can furnish 1/8x3-31/8-31/4-33/8-31/2-35/8-37/8.

### STOCK SIZES AND PRICES

All sizes up to and including	3 3-4 x1-4	\$ .50
3 3-4 x9-32	3 3-4 x7-16	.55
3 13-16x3-16 "	3 15-16x1-4	.60
4 x3-16 "	4 1-8 x1-4	.65
		.03
4 1-8 x9-32	4 1-4 x1-4	.70
4 1-4 x9-32 "	4 3-8 x3-8	.70
4 1-2 x3-16 "	4 3-4 x1-4	.80
4 3-4 x9-22 "	4 15-16X1-4	.85
5 x3-16 "	5 1-16x1-4	.90
5 x3-16 " 5 1-8 x1-4 "	5 1-2 x1-2	.95
5 5-8 x5-16 "	5 3-4 x3-8	1.00
6 x1-4 "	6 x5-16	1.10
6 x3-8 "	6 x1-2	1.15
€ 1-4 x5-1€ "	6 1-4 x1-2	1.20
6 1-2 x5-16 **	6 1-2 x1-2	1.25
0 1-0 X3-10	O IL AIL	2.24

256 P. C. Gross lots, 331 P. C.

### DOUBLE SEAL PISTON RINGS.



Seals the groove. Save gas by stopping the leaks and making combustion perfect. They give the motor full power and its rated R. P. M.

Save oil by keeping it in the crank case and out of the combustion chamber, keeps spark plugs clean.

Full directions for installing with each set of rings. How to order—Give year, make and model of car. If possible give diameter of cylinder, width of ring and depth of groove.

### Price List.

		- Width	of Rings in	Inches -
Diameter of	Rings	fe & under	To & under	5/8 & under
11/2 and up	to 35/8	. \$1.35	\$1.75	\$2.00
3% and up			2.00	2.50
4% and up			2.50	3.00
5% and up			2.75	3.75
6% and up			3.50	4.50
7% and up			4.00	5.00

Prices on larger sizes furnished on application.

256 P. C.

### TELL-TALE PISTON RINGS.



Perfect compression, a ring that wears in to fit the outof-round spots. Their wearing surface coming in contact with the cylinder walls consists of a series of finely tooled spirals or serrations 2-1000 of an inch deep, which wear in to fit the exact shape of each cylinder in about 100 miles of running, insuring perfect compression immediately. Also stop oil pumping or if motor is not pumping oil now, to eliminate any possibility of oil trouble developing later.

The oil channel scrapes all excess oil on the down stroke of the piston; on the up stroke this excess oil is released through the outlets in the bottom of the channel, being returned to the crank case.

The Tell-Tale oil channel is the only one with outlets to prevent oil filling the groove and clogging. Also note the oil channel does not run into the joint.

Tell-Tale rings are one-piece, cast of the finest, dense-grained grey iron. They have plenty of tension and long life. Easy to install and guaranteed against breakage. Packed 12 or 18 in a box. Always install 3 rings on each

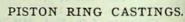
304 P. C.

### BURD HIGH COMPRESSION PISTON RINGS.



High compression, no waste of gas or oil. highly efficient motor.

All sizes,  $3\frac{1}{2}$  inches and under to  $2\frac{1}{2}$  inches. Each...\$1.25 All sizes,  $4\frac{1}{2}$  inches and under to  $3\frac{1}{2}$  inches. Each... 1.50 336 P. C.





Cast Iron Piston Ring Castings are of the highest quality, being close grained, and containing enough pliability to insure perfect compression when used. Many people prefer this style piston ring blank, as different thickness of rings can be cut from same blank.

No.	1-PR.	21/2x6	inches.	No.	10-PR.	43/4x6	inches.
No.	2-PR.	23/4x6	inches.	No.	11-PR.	5 x6	inches.
No.	3-PR.	3 x6	inches.	No.	12-PR.	51/4x6	inches.
No.	4PR.	31/4x6	inches.	No.	13-PR.	51/2x6	inches.
No.	5-PR.	31/2x6	inches.	No.	14-PR.	53/4x6	inches.
No.	6-PR.	33/4x6	inches.	No.	15-PR.	6 x6	inches.
No.	7-PR.	4 x6	inches.	No.	16-PR.	61/2x6	inches.
No.	8-PR.	41/4x6	inches.	No.	17-PR.	7 x6	inches.
No.	9-PR.	4½x6	inches.	No.	18-PR.	8 x6	inches.
Pric	e, per 1	00 pou	nds				.\$16.00

204 P. C.

### LEAK-PROOF PISTON RINGS.



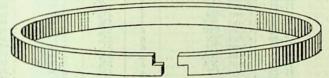
Of two-piece construction, which makes possible equal tension or cylinder wall pressure at all points.

An additional advantage in replacement work is its flexibility, its greater possibility of accommodating itself to cylinder wear.

Diameter.		Wid	ths.	
2% to 415	· · · · · · · · · · · · · · · · · · ·	\$1.25 in all	Widths.	
	1/4 to 18	3/s to 76	1/2 to 18	5/s to 3/4
	Inc.	Inc.	Inc.	Inc.
5 to 570	\$1.75	\$1.85	\$1.95	\$2.00
51/2 to 518	2.25	2.45	2.65	2.75
	2.75	3.05	3.35	3.50
7 to 718	3.25	3.65	4.05	4.25
	3.75	4.25	4.75	5.00
	4.25	4.85	5.45	5.75
10 to 1015	4.75	5.45	6.15	6.50
11 to 1118	5.25	6.05	6.85	7.25
12 to 12 15	5.75	6.65	7.55	8.00
13 to 1315		7.25	8.25	8.75
14 to 1418	6.75	7.85	8.95	9.50
15 to 1518		8.45	9.65	10.25
16 and over		Spec.	Spec.	Spec.
			THE STATE OF THE S	

Made in all standard sizes and oversizes, both over-widths and over-diameters. No extra charge for over-size rings. Up to 5", 301 P. C. In lots of 6 doz., 303 and 58 P. C. 5" and larger, 3/8" wide 304 P. C. 5" and larger, 1/2" wide 3

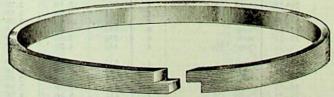
### SNAP PISTON RINGS.



Manufactured by a special foundry process which gives them contact against the cylinder wall around the entire circumference. Each ring is cast slightly out of round, the degree of out-of-roundness being mathematically determined for each size and oversize ring. It is just enough to insure that when the expansion opening is cut and the step joint. made, the ring closes up to a perfect circle and has contact against the cylinder wall. They are made with either stepcut or mitrecut joints and wrapped in waxed paper and packed 12 to the box, made in every size and oversize to fit gas engines.

Ford sizes, lots 12 to 100. Price each 96	\$0.25
Sizes 25/s to 41/4", 18-1/4-16" width	\$0.30
Sizes, 4 to 5", 16-1/4-16" width 147	
Sizes % to 1/2" width. Extra, each	02

### HIFFY-GRIP PISTON RINGS.

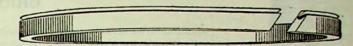


A one-piece concentric ring with a velvet finish that will seat in a jiffy. It has an improved joint that cannot butt. Packed in individual glassive envelopes, twelve rings to the package.

Made in all standard and over-sizes up to five inches in diameter.

Price,	each			 	356 \$0.50
Price.	each.	gross	lots.	 	21/23 .50

### SUPEROYL PISTON RINGS.



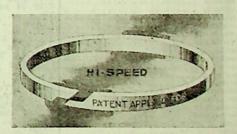
A special ring designed for the control of excess oil in automobiles and gasoline engines. It is a concentric ring with an oil reservoir, which collects all of the excess oil from the cylinder walls on each down stroke of the piston.

Diameter.		Widt	hs.	
2% to 418		\$1.00 in all	Widths.	
1	4 to fe	3/s to To	1/2 to 1/6	3/s to 3/4
	Inc.	Inc.	Inc.	Inc.
5 to 516	\$1.40	\$1.50	\$1.55	\$1.60
5½ to 5½	1.80	2.00	2.10	2.20
6 to 618	2.20	2.50	2.65	2.80
7 to 718	2.60	3.00	3.20	3.40
8 to 818	3.00	3.50	3.75	4.00
9 to 918	3.40	4.00	4.30	4.60
10 to 1018	3.80	4.50	4.85	5.20
11 to 1118	4.20	5.00	5.40	5.80
12 to 1218	4.60	5.50	5.95	6.40
13 to 1318	5.00	6.00	6.50	7.00
14 to 14 1	5.40	6.50	7.05	7.60
15 ·to 15 18	5.80	7.00	- 7.60	8.20
16 and over	Spec.	Spec.	Spec.	Spec.

304 P. C. In 6 doz. lots, 307 and 51 P. C.

Made in all standard sizes and oversizes both over-widths and over-diameters. There is no extra charge for over-size rings.

### HI-SPEED PISTON RINGS.



Will Prevent Leakage. The Diagonal Feature Will Force the Ring to Travel.

Are mechanically right, automatically tooled, and micromically true to a margin not greater than 0.001. The patented diagonal step cut prevents leakage and forces the ring to travel spiral wise in the piston groove, and will prevent accumulation of grease or carbon under the rings, and will not stick or score the cylinder.

Being manufactured nearly concentric from selected gray cast iron; mixed with special ingredients from secret formula, being individually cast, have flexibility and equal tension, will not wear the cylinder oblong.

Stocked in over-sizes as well as standard in steps, from 0.005 up to 0.060. No extra charge for over-size.

For M. M. sizes or rings not listed, special price on request.

Sizes from 21/2" to 41/2" in diameter and not over onehalf inch in width, including over-size.

Price,										
Sizes	41/2"	to	51/2	. 1	Price,	ea	ich.	 	 	60
336 P.										



Manufactured strictly to the specifications of the motor builder, "same iron"—"same weight"—"same bushings"; each detail guaranteed to meet with the motor builders' requirements, although where aluminum has been furnished we supply commercially light pistons of approved design. In meeting motor builders' specifications, Ohio Pistons insure the continued economically efficient performance of your motor.

Oversizes Standard, .003, .005, .010, .015, .020, .025, .031, .040, .0625, Regrind Type. The Regrind Type piston is completely machined in all details with the exception of the diameter, which is turned .0625. In addition to the above oversizes any of the standard oversizes are available for immediate shipment from the factory. Special or odd oversizes on some models, such as  $\frac{3}{16}$  oversize, may be secured from the factory on twenty-four hours' notice.

In addition to pistons listed below the factory is constantly adding new models, and in practically all cases can be of service to you. If piston is not listed, forward sample, properly tagged, with name and model of motor.





Stock No.	Name of Car	Model	Year	Motor	No. Cyls.	Dia.	Price Regrind Type	Price Finish
195 196	Abbott Detroit. Ace Truck. Acme Truck. Acme Truck. Acme Truck. Acme Truck. Acme Truck. All Power Truck. American 6. American Beauty Anderson Anderson Anderson Anderson Armleder Truck. Armleder Truck. Armleder Truck. Armleder Truck. Atterbury Truck. Auburn Auburn Auburn Auburn Auburn Autohorse Available	644		Cont. 7W	6	31/4 31/2	2.70 3.10	2.95 3.25
157	Ace Truck	21/2 and 3 Ton		Buda HTU	4	31/2 41/4	4.50 3.50	5.00 3.80
200	Acme Truck	A- 2 Ton		Cont. NA Cont. C2 Cont. E4 Cont. E4	4	3%	3.90	4.25
201	Acme Truck	C-31/2 and D 4 Ton		Cont. E4	4	41/2	4.30	4.50 4.50
202	All Power Truck	A-SU-4-3½ Ton	19-20	Rut	6	4½ 3½ 3¼ 3¼	2.60	3.20
345 195	American Beauty	EFG-48	19-20	Cont. 7W Cont. 7W Cont. 7N Cont. 7R Buda HTU	6	31/4	2.70	2.95
195	Anderson	400 A-E	18-19	Cont. 7W	6	31/4	3.10	2.95 3.25
196 199	Anderson	30-40	20-21	Cont. 7R	6	31/2	2.70	3.00
157	Apex Truck	E-21/2 Ton	20-21	Buda HTU	4	41/4	3.90	5.00 4.25
201	Armleder Truck	KW-3 Ton	18-21	Cont. C2 Cont. E4 Buda HTUBuda HTU	4	41/8	4.30	4.50
157	Armleder Truck	HW- 2 and 21/2 Ton	20-21	Buda HTU	4	41/4	4.50	5.00 5.00
157	Atco Truck	A-2½ Ton	18-21	Lyco	4	3 1/2	4.50 2.85	3.35
250 201	Atterbury Truck	6-7C-2½ Ton	17-21	Cont. C2	4	3 ½ 4 ½ 4 ½ 3 ¾ 3 ¼	3.90	4.25
202	Atterbury Truck	3½ Ton	17-21	Cont. E4	4	41/2	3.50	4.50 3.80
200 195	Atterbury Truck	6-39	17-19	Cont. 7W	6	31/4	2.70	2.95
196	Auburn Auburn Auburn Autohorse Available Available Available Beck	6-40 and 6-44	17-20	Cont. NA Cont. 7W Cont. 7N Cont. 7R	6	3½ 3¼ 3¾ 3¾	3.10	3.25
199	Auburn	6-39 H and R	19-21	Cont. 7R	6	334	3.50	3.80
200	Available	1 Ton	17-21	Cont. NA	4	334	3.50	3.80
201	Available	2 Ton	17-21	Cont. C2	4	41/8	3.90	4.50
202	Available	A-1 Ton	18-21 18-19	Cont. 7N	4	4 1/2 3 1/2 3 3/4 4 1/8	3.10	3.25
196 200	Beck	A-B-1½ Ton	18-20	Cont. NA	4	334	3.50	3.80 4.25
201	Beck	C-2 Ton	18-21 20-21	Cont. C2	6	31/4	3.90	3.00
199 157	Belmont	2 Ton	20-21 18-21	Buda HTU	4	41/4	4.50	5.00
196	Bessemer	C-G- 1 Ton	18-21 18-21	Cont. 7N	4	31/2	3.10	3.25
200	Beck Beck Beck Beggs Belmont Bessemer Bessemer Bessemer Bessemer Bessemer Bour Davis Bour Davis	6-39 H and R.  10 1 Ton 2 Ton 3½ and 5 Ton A-1 Ton A-B-1½ Ton C-2 Ton 20 T 2 Ton C-G- 1 Ton H2-1½ Ton C-G-2 1 Ton H2-1½ Ton T-0 J-J2-2-2½ Ton K2-4 Ton J-J2-2-2½ Ton K2-4 Ton 17-19 20-21 17B-18B-21 F-2½ Ton S2-S4-H-J-J2-S K-3-4-5 R-2-4 D44- 1st D44- 2nd EHK-45 45	18-21	Cont. 7R Cont. NA Cont. NA Cont. C2 Cont. E4 Cont. TN Cont. C2 Cont. TR Buda HTU Cont. TN Cont. NA Cont. C2 Cont. TR Cont. TN Cont. TA Cont. C2 Cont. E4 Cont. E4	4	334	3.90	4.25
201 202	Bessemer	K2- 4 Ton	20-21	Cont. E4	4	41/2	4.30	4.50 2.95
195	Bour Davis	20-21	17-19 20-21	Cont. 7W	6	31/4	2.70	3.00
199	Bour Davis Bour Davis Bour Davis Brinton Brockway Brockway Brockway Buick Buick	17B-18B-21	17-21	Cont. 7W Cont. 7R Cont. 7N Cont. C2	6	31/6	3.10	3.25
201	Brinton	F-21/2 Ton	19-21	Cont. C2	4	41/8	3.90	4.25 3.80
200	Brockway	K-3-4-5	19-21	Cont. NA Cont. C2 Cont. E4	4	334	3.90	4.25
202	Brockway	R-2-4	19-21	Cont. E4	4 -	41/2	4.30	4.50
151 -	Bulck	D44- 1st	1916 1917	Own Own	6	31/4	3.10	3.25
152	Buick	EHK-45	18-21	Own	6	334	3.10	3.25
154	Buick	45	22	Own	6	334	3.10	3.25 5.00
157	Buda	51	1915	Own	8	31/2	3.00	3.50
159	Cadillac	53	1916	Own	8	31/6	3.00	3.50
160	Cadillac	45 HTU 51 53 55-57-59 U-18-19	17-20 18-21	Cont. 9N	8	31/4	3.00	3.75
196	Cadillac Cadillac Cadillac Case Case Chalmers Chandler Chandler	V 30-35-A-B-C 17A-25	20-21	Cont. 9N	6	31/2	3.10	3.25
170	Chalmers	30-35-A-B-C	18-21	Own	6	31/4	3.00	3.50
175 176	Chandler	11A-25	16-17 17-19	Own	6	33%	3.00	3,50
177 202	Chandler	A A A A A A A A A A A A A A A A A A A	19-21	Own	6	31/2	3.00	3.50
180	Chandler Chandler Chase Truck Chevrolet	Baby Grand Royal Mail 490.	*******	Cont. E4	4	41/2	4.30	4.50
		FA-3-1 10H	14-21	Own	4	311	2.50	3.00
190	Cleveland	1999	19-21	Own	6	3 1	2.60	3.10
200	Clydesdale	32-42	18-21	Own Cont. NA Cont. C2 Cont. E4	4	334	2.80 3.50	3.80
201	Clydesdale	45-65-658	18-21	Cont. C2	4	41/6	3.90	4.25
202	Cole	870-883	19-21 18-21	Northway	8	41/2 31/4 31/4	4.30 3.10	3.60
195	Collier		17-18	Cont. 7W	4	31/4	2.70	2.95
200	Collier	214 Ton	19-20 20-21	Cont. NA	4	33/4	3.50	3.80
245	Columbia	Challenger	1920	Rutenber	6	41/8	2 60	3.20
199	Columbia	D-C-C-S	20-21	Cont. 7R	6	31/4	2.70	3.00
195 201	Cleveland Cleveland Clydesdale Clydesdale Clydesdale Cole Collier Collier Collier Collier Columbia Columbia Columbia Columbia Columbia	M-O-31/4 Ton Baby Grand, Royal Mail 490- FA-2/4-1 Ton 40, 1922 32-42 45-65-658 65-EC-90 870-883	1919	Cont. E4 Northway Cont. 7W Cont. NA Cont. NA Cont. C2 Rutenber Cont. 7R Cont. 7W Cont. C2	6	31/4	2.70	4.50
-		Sometime and and P. C. S. to S. c.			-	1 /8	1.00	

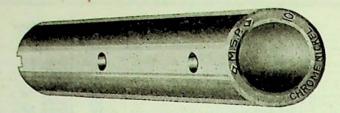
ek	Name of Car	Model	Year	Motor	No. Cyls.	Dia.	Price Regrind Type	Fi
-	Columbia Truck	F	18-21	Cont. NA	4	3%	3.50	3
0	Commerce	F T-12-16-% and 1% Ton, E-EP- 1 and 2 Ton.	18-21	Cont. NA	4	3%	3.50	1
7	Comet	C-53	1921	Cont. NA Cont. 9N. Cont. 7N Cont. 7N Cont. NA	6	3 1/2	3.25	
6	Comet	C-51	1920	Cont. 7N	4	3 1/2	3.10	1
6	Conestoga	2 Ton	19-20	Cont. NA	4.	3%	3.50	
5		7K-7W-8W	17-20	:::::::::::::::::::::::::::::::::::::::	4-6	31/4	2.70 3.10	
6 -	Continental	Ton 2 Ton 7K-7W-8W 6H-6A-7N 9N	16-21 17-21		6	31/2 31/8	3.25	
7	Continental		20-21		6	31/8	2.90 2.70	
8		9W 7R NA-N CA-C2 E4-E7 C Long Type A-3½ Ton B-C-2-2½ D-E-1 and 1½	20-21 17-21		6	3%	3.50	
0	Continental	CA-C2	17-21		4	1 41/8	3.90	
1	Continental	E4-E7	17-21		4	41/2	4.30	1
2	Continental Continental Corbett	C Long Type	17-21	Cont. E4	4	41/2	4.30	
2	Corbett	B-C-2-236	17-21 17-21 19-20	Cont. E4	4	41/8	3.90	1
1 0	Corbett	D-E-1 and 11/2	17-21	Cont. NA Cont. 7N Cont. 9N	6	31/2	3.50	1
6			20-21	Cont. 9N	6	33/2	3.25	1
7		K-32-34-36 H-42-44-46	19-20	Lyce	6	31/2	2.85	
5	Crow Elkhart Crow Elkhart Dart	H-42-44-46	19-20 20-21	Rutunber	4	414	4.50	1
7	Dart	M-2½ Ton HI-KL-18	1918	Buda Cont. 7W		31/4	2.70	1
5	Davis		20-21	Cont. 7R	6	314	3.10	
9	Davie	J-JI-M	20-21	Cont. NA	4	31/2	3.90	
0	Day Elder	D	20-21 18-21 20-21 20-21	Cont. 7W Cont. 7R Cont. 7N Cont. NA Cont. C2 Cont. E4 Cont. 7N Cont. NA	4	41/8	3.90	1
1 2	Day Elder	E 21/ Ton	20-21	Cont. E4	4	31/2	4.30 3.10	1
6	Dearborn	11/2 Ton	1919 19-20	Cont. NA	4	334	3.50	1
0	Defiance	1½ Ton 1½ and 2 Ton E2-E2½	19-20	Cont. C2 Cont. NA Cont. C2	. 4	334 418 314 334 318 414 414 314	3.90	1
6	DeKalb Denby			Cont. 7N	4	33%	3.50	1
0	Denby	13-15-2 Ton 25-23 Ton 210-27-3 and 5 Ton E-F-214 and 4 Ton	17-19	Cont. C2	4	31/8	3.90	
1	Denby	210-27-3 and 5 Ton	17-19		4	41/2	4.30	
2 7	Denby Dependable Diamond T Diamond T Diamond T Diamond T Dodge	E-F-21/2 and 4 Ton	All 16-21	Buda Cont. 7N Cont. C2 Cont. E4 Cont. NA	. 4	31/4	3.10	1
6	Diamond T	J5-1 Ton	16-21	Cont. C2	4	41/2 41/2 33/4 37/8	3.90	
1 2	Diamond T	L-B-R-3½ Ton T-FS-J4-1½ Ton	16-21	Cont. E4	4	33%	4:30 3.50	
ő	Diamond T	T-FS-J4-11/2 Ton	16-21 All	Own	4	3 %	3.00	
0	Dodge	All	18-21	Lvco	4	3 1/2	2.85	
0	Dort	B-10-11-15A E-3½ Ton B-1½ Ton	18-21	Buda Cont. 7N	4	314	3.10	
6		B-1½ Ton	1922	Ansted	6	31/4 31/4 31/4	3.00	1
5			18-20 19-21	Ansted Cont. 7W Lyco	6	31/4	2.70	
5	Elear	DHK6 D-H-K-4 K	19-21	Lyco	6	31/2	2.85	
0	Floin	K	20	Falls Cont. 7R Cont. 7W	8	31/4 31/4 31/4	2.70	
0	Empire	70 A		Cont. 7W	6	31/4	2.70	
5	Empire Enger		15	Cont. 7N	6	31/2	3.10 4.50	
6	Deig	Truck 1½-2-2½ Ton	18-21	Buda	4	41% 33%	3.90	1 4
1	Erie		19-21	Pwn. Cont. NA	4	33%	3.25 3.50	
5	Essex Fageol			Cont. NA	4	334	3.50	
0		1½ Ton R-P-2 Ton SD-1 Ton UE-TE-1½-2 Ton WD-XD-3½-5 Ton	18-21	Cont NA	4	334	3.50	:
0	Fargo Federal Federal	UE-TE-11/2-2 Ton	20	Cont. C2	4	416	3.90 4.30	
2	Federal	WD-XD-3½-5 Ton	20-21	Cont. C2 Cont. E4 Cont. 9N	6	31/2	3.25	1
7	Family		All	Own	4	4	4.25	1
6	Fordson	m	A 11	Own	4	3%	2.30	
5 -A	Ford	With Pin Pin and Rings. A-AX-1-14 Ton		1: -: :::::::::::::::::::::::::::::::::				
-B		A-AX-1-116 Ton	19-21	Cont. 7N	4	31/2 41/2 41/4	3.10	
6	Forshler		18-21	Buda	4	412	4.50	
7		E-2 Ton	18-21	Lyco	4	31/4	2.85	
0	Gardner	TO TOTT O MON	19-21	Puda	4	414	4.50	
7	Gary	G-11/2 Ton	19-21	Cont. NA	4	334	3.50	
00	Garrord Gary G-M-C	16-31-%-1-1½ Ton	18-21 18-20	Cont. C2	4	416	3.90	
1 2	G-M-C	10-BH-2 100 G-1½ Ton 16-31-¾-1-1½ Ton 41 71-101-3½-5 Ton 15-¾ to 1 Ton	19-21	Buda Cont. NA Cont. C2 Cont. 34 Cont. 7N	4	414 314 414 314 314	4.30	
6		K	15-18 19-21	Buda	4	414	4.50	
7	Gersix	6	18	Buda Cont. 7N	6	31/2	3.10	
6	Ghent	15-1 Ton	18 19-21 19-21 19-21	Cont. 7N	4	416	3.10	
1		16-2 Ton	19-21	Cont. E4	4	41/4 41/4 33/4 31/4	4.30	
12	Ciant	17-3½ Ton	21	Cont. NA	4	334	3.50	
00	Ciant	15A	A11 -	Cont. 7N Cont. 7N Cont. C2 Cont. E4 Cont. NA Cont. 7N Cont. NA Cont. C2 Cont. C2 Cont. C2 Cont. C2 Cont. E4 Falls	4	33%	3.10	
00	Globe E. St. Louis Globe	B-11/2 Ton	All	Cont. C2	4	334 414 334	3.90	
00		15-65-114 Ton	All 20	Cont. NA	4	334	3.50	
00	Gramm Bernstein	20-2-21/2 Ton	20-21	Cont. C2	4	416	3.90 4.30	4
12	Gramm Bernstein	A-1 10n B-11½ Ton C-CC-2 Ton 15-65-11½ Ton 20-2-2½ Ton 35-31½ Ton	20-21 19-20	Falls	6	314	3.00	1
6	Grant		19-20	Falls	9	316	3,10	
10	Hahn Hahn	B-G-¾-1 Ton	10-20	Cont. NA	4	334	3.50 3.90	3
00	Linhn	CD-DE	19-20 20-21		4	41/2	4.30	4
)2	Hahn Halladay Hall	EE-F	17-20	Put	6	316	2.60	1
15	Hall	9.91/ Ton	20-21	Cont. C2	4	41/2	3.90 4.30	1
)1 )2 30	Liali	3½-7 Ton	20-21 15-18	Own	6	314	3.50	- 4
30	Haynes Haynes	45	19-91	Own	6	316	3.20	
31		A-18	20-21	Cont. NA	4	334	3.50	1
)1	Higrade	B-20	20-21 20-21 18-20	Own	6	314	2.70	4
5	Hollier	206 All	All	Cont. 7N	6	31/2	3.10	1
96 96	Hudson	Super 6	17-21	Cont. 7N	6	316	3.10	200
			15-16	Cont 7N	6	43 - 54	0.10	

k	Name of Car	Model	Year	Motor	No. Cyls.	Dia.	Price Regrind Type
-	Huffman	w	19	Cont. 7W	6	31/4	2.70
3	Huffman Huffman	Truck B	20-21 20-21	Cont. 7W Cont. 7R	6	31/4	2.70 3.50
	Hupp	IR	18-21	Own	4	31/4	2.90
-3	Hurlburt	2-31/2 Ton	18-20	Buda	4	4 1/4 3 1/2	4.50
	Independent Iowa Independent	2-3½ Ton	18-21	Buda Cont. 7N Cont. C2	4	31/2	3.10
- 3	Jackson	348	16	Own	8	4 1/8 2 7/8	2.80
- 1	Jackson	6-38 All	19-20 19-20	Cont. 7W	6	31/4	2.70
-	Jordan	F	19-21	Cont. 9N	6	31/2	3.10
	Jordan	M	19-21	Own Cont. 7W Cont. 7N Cont. 9N Cont. 7R Cont. NA	6	31/4	2.70
	Kalamazoo Kearns	G	19-21 All	Cont. NA	4	334	3.50
	Kenworthy King Truck	16 55	19-20	Cont. 9N Cont. E7 Cont. C2 Cont. E4 Cont. F4 Cont. 7W Cont. 7R	6	31/2	2.85 3.25
	King Truck Kleiber	3½ Ton	All	Cont. E7	4	41/2	4.30
	Kleiber	B-C-21/2-31/2 and 2 1011	All	Cont. C2	4	41/8	3.90 4.30
	Kline	3½ Ton A-AA-BB-1½ and 2 Ton B-C-2½-3½ 6-38-42-G-H	17-20	Cont. 7W	6	4 1/2 3 1/4 3 1/4	2.70
	Kline Koehler	To I	All	Cont. 7R	6	31/4	2.70
	Lane	B-21/2 Ton	All	Cont. 7N	4	31/2	2.85 3.10
	Lane	C-F-11/2-31/2 Ton	All	Cont. NA	4	3%	3.50
	Larbee	M-1-11/2 Ton	All	Cont. C3	4	41/8	3.90
1	Larbee	B-21/2 Ton C-F-11/4-31/2 Ton B-11/2-21/2 Ton M-1-11/2 Ton P-D-W-21/2 Ton R-S-AL-31/2 Ton	All	Cont. C2	4	3 1/4	3.50
	Leach	R-S-AL-31/2 Ton	All 19-20	Cont. C2	4	41/2	4.30
-	Leach	21-A	21	Cont. 9N Cont. 7N Cont. 7W	6	31/2	3.25
	Lexington	X-6-0	16-19	Cont. 7W	6	31/4	2.70
	Lexington	R-S Lark	1922	Cont. (R	6	31/4	2.70
	Liberty	10A	18	Ansted	6	31/4	3.00
	Liberty	10B	19	LCONF 7R	6	31/4	2.70
	Lippard Stewart	F-G 116-2 Ton	20-21 15-21	Cont. 9W Cont. C2 Cont. NA	6	3 1/8	2.90
	Lippard Stewart	¾ -1 Ton H-M-2-2½-3 Ton	15-21	Cont. NA	4	4 1/8 3 1/4	3.90
	Macar Macar	H-M-2-216-3 Ton	18-21 18-21	Cont. E4	4	41/2	4.30
	Macar	L-1½ Ton S-1 Ton	21	Cont. C2	4	4 1/8	3.90
	Madison	16-40	19	Rut	6	31/8	2.60
	Maibohm Marion Handly Marion Handly Master	B	20-21	Falls Cont. 7N Cont. 9N	6	31/8	3.00
	Marion Handly	B6-60	18	Cont. 7N	6	31/2	3.10
	Master	W-WL-D-M-O-1-2-21/2 Ton	19-21	Buda	4	31/2	3.25 4.50
	Maxwell McLaughlin	60	All	Own	4	35%	3.50
	McLaughlin	25 60 63 Huryton 1 Ton.		North	6	218	2.75
	Menominee	Hurvion 1 1 on.	19-21	North Cont. NA Cont. C2 Cont. E4	4	334	2.75 3.50
	Menominee	G-316 Ton	18-21 18-21	Cont. C2	4	41/8	3.90
	Metz	R-Master-6	20-21	Rut	6	4 1/2	4.30
	Mitchell	C-E-F-42	16-21 17-20	Own	6	31/8	2.60 3.10
	Monitor	G-3½; Ton R-Master-6 C-E-F-42 D-E-40	18-19	Own	6	31/4	2.95
	MOINTOI	10	16-17	Own	6	31/4	2.70 3.50
	Moon	6-66-68	19-20 20-21	Cont. 7N	6	31/2	3.10
			19-20	Cont. 7R Cont. 7W	6	31/4	2.70
			17-19	LCODE NA	6	31/4	2.70
	Moreland	B-1½ Ton C-2½ Ton	17-20 17-19	Cont. C2 Cont. E4	4	41/8	3.90
	MANUAL CONTRACTOR CONT	120	18	Cont. E4	4	41/2	4.30
	Muskegon	135	18	Cont. C2	4	41/2	3.90 4.30
	National	681-687 AF-AE	18-21 17-18	Own Cont. 7N Cont. C2 Cont. E4 Cont. NA Cont. C2 Cont. E4	6	31/4	3.10
	Nelson LeMoon	E E9 11/ 01/ m	18-20	Cont. 7N	6 4	31/2	3.10
	Nelson LeMoon	F-31/2 Ton F-1 Ton	18-20	Cont. E4	4	41/4	3,90 4,30
			18-19	Cont. NA	4	334	3.50
	Netco	H	19-21	Cont. C2	4	41/8	3.90
	Noble	H	18-19	COLICE LAT	4	4 1/2 4 1/2 4 1/2 3 1/2	4.30
	Northway		20-21	Lyco	4	31/2	2.85
	Northway			Northway	6-8	314	3 10
	Northway Northway	6-20-KS		Northway	6	213	2.75 2.75 2.85 2.85
	Norwalk	4-18	20-21 18-20	Lyco	6	213	2.85
	Norwalk Oakland		All	Lyco Lyco	4	31/2	2.85
	Oaklond		16-18		6	31/2	2.85 2.75
	Oakland	50	19-21	I NOTED	6	315	2.75
	Old Hickory Oldsmobile	130W	18-20	North Cont. NA	8	31/2	3.10
	Oldsmobile	31	16-18	North	6	334	3.50
	Oldsmobile	45A-B-46-47	19-21 18-21	North	6	312	2,75
	Oneida	1 Ton	All	I OWn	8	27/4	2.80
	Oneida	A-B-1-1½ Ton	17-20	Cent. NA	4	311	2.50 3.50
	Oneida	D-314 Ton	17-20 17-20	Cont. NA Cont. C2	4	41/8	3.90
	Overland	75R	16-17	Cont. E4	4	4 1/8 4 1/2 3 3/2	4.30
	Overland	83-79-80-84-88	14-19	Own	4	3 % 4 1/8	3.15
	Overland	1440	17-19 20-21	1 ( ) turn	4	33%	3.10
	Overland	82-86-88-89-6	14-18	Own Cont. 7N Cont. 7W	6	334	3.10
	Overland	00-0	18	Cont. 7W	6	31/2	3.10
	Overdend	Truck, 800 IDS	All	0wn	4	334	3.15
	Packard	1-25-1-35	16	Own	4	41/4	3.60
	Packard Truck	Truck, 1,200 lbs. 1-25-1-35 2-25-35-3-35 D-E-1-14-2 Ton 6-38-39P-15-18-19 6-46 Fairfield	17-21		12	3	2.60
	Paige	6-38-39P-15-18-19 6-46 Fairfield.	Early 17-20	Own Rut Cont. 7N	6 6	4 31/8 31/2	4.00
	raige	14 14 44 1 4 1 1 1 1 1 1 1 1 1 1 1 1 1	11-20	I IVIII	C	91/	2.60

ock lo.	Name of Car	Model	Year	Motor	No. Cyls.	Dia,	Price Regrind Type	P
97 02	Paige	6-55		Cont. 9N	6	31/2	3.25	\$3
16	Pan	334 Ton	All	Cont. E4	1	3 1/2	4.30 3.10	3
5	Pan Pan American Pan American	G-5	All	Rut	6	3 1/8	2.60	3
75	Pan American	J-7 E-214 Ton	All	Gont. 7W	6	314 414	2.70	
6	Parker	E-2½ Ton. 2-3 Ton.	All	Cont. 7N	4	314	3.10	
00	ParkerPathfinder	4-5 Ton	All	Cont. NA Cont. 7N Cont. 7W	4	31/2	3.50	
15	Pattarean	6-46	14-15	Cont. 7W	6	31/2	3.10 2.70	
50	Patterson Perless 56 Pledmont Piedmont	6-50 Series 5-6-FF 4-30	19-20	Cont. 7R	6	314	2.70	
0	Piedmont	4-30	19-21	Own	8	31/4	3.25	1
55	Piedmont	6-40	10-21	Cont. 7W	6	31/2	2.85	
0	Pierce Arrow Truck	R-S-X-8-5 Ton. X4-5-2 Ton.	Pat	Own	4	4 7/8	6.00	
96	Regal	J		Own	6	31/2	3.10	-
06	Rainier	J % Ton. 1 and 1½ Ton.	All	Cont. 7N	4	31/2	3.10	1
00	Rainier	346 100	All	Cont. NA	4	334	3.50 4.30	3
2	Rainier	2 and 216 Ton	All	Cont. Co	4	41/2	3.90	4
0	Rainier	M-T-6 % Ton Speedwagon	17-19 15-21		6	4 1/8 3 1/8 4 1/8 3 3/4	4.00	4
1	Reo R-S		12-21	Cont. NA	4	3.32	4.25 3.50	1
0	Republic	2½ Ton. 3½ Ton.	12-21 15-21	Cont. C2	4	41/8	3.90	4
2	Republic	54	20-21 17-18	Cont. E4	4	41/2	4.30	1
6	Roamer		19-20	Own	6	31/2	3.10	3
7	RoamerSandow	CG-JS-1½ & 2½ Ton	12-20 15-20	Cont. NA	4	334	3.50	3
6	Sandow	2½ Ton	15-20	Cont. C2	4	31/2	3.10	3
1 2	Sandow	2½ Ton. 3½ and 5 Ton.	18-20	Cont. E4	4	41/2 41/8	4.30	4
1	Sanford	25-2½ Ton. 35-3½ Ton.	18-20 18-21 18-21 20-21	Cont. C2	4	41/8	3.90	4
2	Sanford	Six 2 2 and 3½ Ton 39-42	20-21	Cont. 7N	6	31/2	3.10	3
6 7	Sayers	2 and 3½ Ton	19-20	Buda	4	41/4 213 311	4.50	5
1	Schacht Scripps-Booth		18-19 18-19	North	6	211	2.75	2
0	Scripps	C-N-1½ Ton T-W-B-L-2½ Ton 3½-A	18-20	Own Cont. NA	4	33%	2.50 3.50	3
ĭ	Selden Selden Selden	T-W-B-L-2½ Ton	17-20	Cont. C2 Cont. E4	4	344344344444444444444444444444444444444	3.90	4
2	Selden	77-0 1 Ton H-F-1 Ton M-ML-3½ Ton	18-20 18-21	Cont. E4	4	41/2	4.30 3.10	4
6	Selden	H-F-1 Ton	18-21	Cont. 7N Cont. C2 Cont. E4	â	41/8	3.90	4
2	Signal Signal Signal Southern Standard Standard	M-ML-3½ Ton	18-21 20-21	Cont. E4	4	41/2	4.30	4
0	Standard	00	20	Cont. NA	4	334	3.50	3
ĭ	Standard	70-76	18-20	Cont. C2	4	41/8	3.90	4.
2 5	Standard	86 All	18-20 All	Cont. C2 Cont. E4 Cont. 7W Cont. 7W	6	41/2	4.30 2.70	4.
5	Stephens		17-18	Cont. 7W	6	314	. 2.70	2
8	Stephens Stephens-Salient 6	7	17-20	Own	6	31/4	3.00	3.
6	Stewart	8	17-20	Cont. 7N	4	314	3.10	3
0	Stewart	9	17-20	Cont. NA	4	31/2	3.50	3.
2 0	Stewart Studebaker	SE7-ED-EC	17-20 15-20	Cont. E4	4-6	372	3.90	4.
1	Studebaker Studebaker Studebaker Sullivan Superior Superior Templar	SH40-EH50	18-21	Own	4-6	31/4 31/4 31/4 31/4 31/4	3.25 3.20	4.
2	Studebaker	EH EL-2_Ton	19-20 20-21	Own Buda	6	31/2	3.20	3.
7 0	Superior	A-1 Ton	19-20	Lyco	4	314	2.85	5.
0	Superior	D-1 Ton	19-20	Cont. NA	4	3 %	3 50	3.
0 2		All 3½ Ton	18-21	Own Cont. E4	4	414	3.20 4.30	3.
0	Tulsa	D-E-1-4	All 18-21 18-21 18-21	Lyco Cont. E4	4	31/2	2.85	3
2	Ü. S. U. S. United	314 Ton	18-21 18-21	Cont. E4	4	412	4.30	4.
7	United	21/2 Ton. 21/2 Ton.	21	Buda	4	414	3.90 4.50	5.
5	Velie	242 Ton 22-28-38-40 34	16-19	Buda Cont. 7W	6	31/4	2.70 3.00	2.
6			18-20 15-18	Falls Cont. 7N Cont. NA Cont. C2 Cont. E4	6	31/4	3.00	3.
1	Velie Velie Truck Velie Truck Velie Truck	1% Ton	10-10	Cont. NA	4	334	3.50	3
1	Velie Truck	2 Ton		Cont. C2	4	436	3.90	4.
	Watson	5 Ton			4	41/4	4.30	4.
3	Watson Westcott Westcott	S17-S18	17-18	Cont. 7N Cont. 7W Cont. 7R	6	31/2	3.10	3. 3. 4. 4. 3. 2.
9	Westcott	C-38	18-19	Cont. 7W	6	314	2.70	2.
)	White	G-K-D-GK %-15-20-40	21-19	Own	4	33	4.30	4
	White	15-39 1¼ Ton 2 Ton 2½ Ton 5 Ton S17-S18 A-B-38 C-38 G-K-D-GK ¾-15-20-40 G-E-D-G-M G-O-15-20	12-20	Own	4	314 314 334 414 334	5.00	4.
2	White	G-N. GT 15-45	19-20 19-20	Own	1	11	4.30 5.10	5.
9	White Hickory	EH-1% Ton	20-21	Cont. NA	4	413 334 414	3.50	3.
2	White Hickory White Hickory Willys	G-N, GT 15-45. EH-114 Ton K-214 Ton N-312 Ton "6"	20-21	Cont. C2	4	41/4	3.90	4.
6	Willys	"6" 2 TOH	20-21 18-19	Cont. 7N	6	414	3.10	4.
6	Wilson	E-1 Ton.	17-19	Cont. 7N	4	316	3.10	3.
0	Wilson	E-14 Ton	17-19	Cont. NA	4	33	3.50	3.
2	Wilson	E-14 Ton EH-2-214 Ton GH-314-5 Ton C-D-114-2	17-19	Own Own Cont. NA Cont. C2 Cont. E4 Cont. 7N Cont. 7N Cont. NA Cont. C2 Cont. C2 Cont. C4 Cont. NA	4	414	3.90	4.
0	Wolverine	C-D-1½-2	19-21	Cont. NA	4	334	3.50	3.
	Special Specia		MINT THEM		-	1	The state of	

Broken sets, 256 P. C. Complete set, 331 P. C. 2 to 9 sets, 407 P. C. 10 or more sets, 402 and 108 P. C.

### MILWAUKEE CHROME NICKEL PISTON PINS



GUARANTEE: Made from bar stock chrome nickel. S. A. E. 3120. Over 80 scleroscope hardness. Straight and round within .6002. Diameter limit within .0005. Sand blasted; free from scale. Manufacturer's name and trade mark and the oversize stamped on end of each pin. Packed in sets in attractive cartons. Furnished in Standard, .003, .005 and .010 oversizes.

### INDIVIDUAL MOTORS

Following numbers are not interchangeable, but fit only assembly named:

No.	Name of Car	No. of Cyls.		Years	Car Mfgrs.	Standard		Tune	Price
1	Allen		43	1920	Part No.	Diameter .875	31/8	Type D	\$0.75
2	Apperson	8		1916-17	71-02	.9375	23/4	D	.75
3	Apperson	8	8-19, 8-20, App. 84	1918-20	4	.937	2 1/8	В	.75
4 4A	Briscoe Briscoe	4	B-4, 24 T-34, Truck, 34	1917-19 1920-21	10173	.750 1.000	234	D D	.70 .75
5	Buick	4	B-24, B-25, C-24, C-25	1913-15	10766	.740		C	.70
6	Buick Buick	4, 6	B-37, C-36, C-37, D-43 D-45, D-46, D-47, D-49,	1916	30249	.925	3 78 3 78	D	.70
			DX-44, DX-45 Light	1916-17	33550	.750	211	D	.60
8	Buick	6	D-44, D-45, D-46, D-47, DX-44, DX-45 Heavy	1916-17	35276	075		. D	70
		f	D-34, D-35, E-44 to 47,	1310-11	35216	.875	218	D	.70
9	Buick	4.6	E-49, E-50, EX-44, EX-45 H-44 to 47, H-49, H-50,	1918	22206	.750	31/4	C	.60
324			HX-44, HX-45, All H's	1919	22200	.130	3.78		.00
		1	K-44 to 47, K-49, K-50, KX-44, KX-45, All K's	1920					
10	Bulck	6	44 to 50	1921-22	44312	.9687	31/8	C	.70
11	Cadillac Cadillac	8	51	1915		(Step .624)	218	1711	.90
12	Cadillac	8	53 57, 58, 59	1916 1918-21	A446-30891 A448-37673	.625 .750	3 2 18	B	.75
14	Chalmers	6	32A, 32B, Early 32C	1916-18	1110-01010	.8125	27/8	C	.70
15 17	Chalmers Chalmers	6	35A, 35B	1916-20	A-3-257	.8125	3 18 234	C	.75
19	Chandler	6	35C and Speedster Cars up to No. 35000	1920-21 1917-18		.8125		E	.70
				Early type	11282	.750	31/4	В	.75
18 20	Chandler Chandler	6	Cars No. 35001 to 65000 Six 30	1919 1920	11701	.750	3 fe 31/4	B	.75
21	Chevrolet	4	490, F, FA	All	11794	.968	316	C	.65
21 22 21	Chevrolet	4	D	1917-18	42169	.850	318	C	.65
24	Chevrolet Truck Cleveland	6	490, 1 Ton 40	All	428	.850	318	С	
25	Dodge	4	All	1919-20 All	1353 A-2508	.8437	212	В	.70
25	Dodge Truck	4	% Ton	All	A-2508	.8125 .8125	331	CC	.60
27	Dort	4	5			.875	3	C	.75
28	Essex	4	A	1920-21	50118	.875	211	E	.70
29 29	Ford Truck	4	T 1 Ton	1920-21 All	3022 3022	.740 .740	31/2	D	.55
30	Fordson Tractor	4	All	****	5022	1.375	31/2	D	.55
31A 31	Franklin Franklin	6	S 9.	1914-16		1.000	31/4	D	.90
32	Grant	6	HX, Z	1918-21	1-9A 7294	.875	276	D	.75
33	Haynes	6	30, 33, 34, 35, 37	1915-17	9030	1.000	218	B	.80
34	Haynes	6	38, 39	1918	13854	1.000	3 1/8 3 1/8	B	.90
37	Haynes Hudson	6	45, 47, 50 Super Six	1919-21 1919-21	17489	1.000	3 78	В	.90
38	Hupmobile	4		1915-16	13093	1.09375	3 18	D	.85
39	Hupmobile	4	K N	1916-17	45152A	.865 .9375	3 78	D	.75
40	Hupmobile Jeffrey	6	R-1, R-2, R-3 6-71	1919-21	45152A2	.865	218	D	.75
42	Kelley-Springfield Truck	0	K-40, 3½ Ton, K-45, 4 Ton	1917	76A8	.9375	31/8	B	.90
			K-50, 5 Ton, K-60, 6 Ton	1916-21	2531	1.375	4	Spec	1.50
43	Kelley-Springfield Truck		K-31, K-32, 1½ Ton K-35, K-36, 2½ Ton					DELL'AND L	
44	King	8	DE, EE, F, G, H	1917-20	2108	.760	3 4	Spec	1.25
45	Kissell	6	6-42	2021 20		1.125	3 3/8	D	1.75
45A 46	Kissell Kissell	6	36, 21/2 Ton Truck 100 P-1, Six			1.125	4	Spec	1.75
47	Kissell	6	Custom Built			.875 .825	3		.90
48	Liberty	6	10-C	1920-21	W. C.	.875	3 ts	E	.80
49	Locomobile	6	6-38	1913-20		.9375	4	E.	1.25
52	Locomobile Mack Truck	- 6	6-48 A B	1914-21		1.125	41/4		1.40
53	Mack Truck	4	AC		1AB129 1AB123	1.311 1.436	3 1% 4 1/2	D	1.50
54 55	Marmon	6	34	1916-19	A-103	1.125	31/4	D Spec	2.00
56	Marmon Maxwell	4	34-B 25 )	1919-21	B103A	1.1875	31/4 31/4	Spec	1.25
56	Maxwell Truck	4	1 Ton Cast Iron Pistons	1917-22 1920-22	B599 B599	.750	31/4 31/4 3	D	.60
58	Maxwell	4	25 Lynite Pistons	1921-22	30321	.750 .750	34	D	.60

Stock No.	Name of Car	No. o		Years	Car Mfgrs. Part No.	Standar		Туре	Price
59	Mercer	4	Series 5	1915-21		1.000	31/4	A	1.00
60	Mitchell	6	D-40, E-40	1916-21	A6497	.9835	2 7/8	D	.90
61	Mitchell	6	C-42, E-42, F-40	1919-20	A6035	.9835	316	D	1.00
62	Nash	6	6-81, 2, 3, 4, 5, 6	1918-20	30457 51613	.9375 .9375	3 3	B	.80
62A	Nash	6	Used with 4-Ring Pistons All	1921	30717	.9375	3	B	.80
63	Nash Truck	6	Sextet	1920-21	51688	1.0937	3	D	.85
64	National	6	34-B, 34-C	1918-21	C-3565	.668	278	D	, .60
65	Oakland	4	43-A	1919-21	326459	.850	31/4	E	.65
66	Oldsmobile Oldsmobile Truck	4	Economy Speedwagon	1919-21	326459	.850	31/4	E	.65
68	Overland	4	59, 69, 79, 81, 83, 85-4	1916-17	3364	.875	311	В	.65
69	Overland	4	90	1917	19280	.875	318	B	.65
70	Overland	4, 6	75-B-85-6	1917 1920-21	16755 300313	.875 .734	3 276	D	.60
71	Overland	4	4	1916	000010	.6875	212	В	.75
72 73 74	Packard Packard	12 12	1-25, 1-35 2-25, 2-35, 3-25, 3-35	1916-17		.750	234	В	.75
74	Packard Truck	4	E. D. I. 1½-2 Ton		43038	1.125	315	В	1.25
75	Packard Truck	4	ED. 3-4 Ton		50322 64927	1.250 1.250	4 16	B	2.50 1.70
76	Packard Truck	4	ED, 5-6 Ton	1000 01	6443	1.000	213	B	.90
77	Paige	6	6-42	1920-21	6443		3	ь	.90
78	Peerless	8	Series 6	1917-18 1919-20		.875 .875	3		.90
79	Peerless	8	Series 1	1917-21		1 0625	334		1.50
80	Pierce-Arrow	. 6	6-38	1917-21	1004	.859	3 13	В	.90
83	Premier	6	6-B, 6-C, 6-D	1918-19	1RA4	1.235	35%	D	.90
84	Reo	6	4 Cyl. 6 Cyl.	1918-19	IRA+	1.235	3 18	D	.80
85 86	Reo Reo	6	T-6	1920-21	1T6A69	.9845	27%	C	.90
84	Reo Truck	4	Speedwagon	All	1RA4	1.235	35%	D	.90
88	Reo Truck	4	M, N	1915-18 1918-21	1MA6 1TA7	1.235 1.235	316	D	.90
84	Reo Truck	4	F	1920	HAI	.9982	378	Spec	1.50
90	R. & V. Knight	6	6	1915-18		.625	21/2	D	.60
91 92	Saxon	6	S-4, Y-18 6 Cyl.	1916-20	4170S	.625	21/2	D	.60
93	Saxon Saxon	6	125-D	1920-21	7021	.999	211	D	.70
95	Standard	8	G. H. I	1918-20		.875	213		1.00
96	Stearns-Knight	4	All	1916-21	14948	.9689	3 %	D	1.10
97	Stephens	6		1920	D7-2	.999	211	D	.75
98	Studebaker	4.6	SF, ED, 7, EG	1916-21	16890	1.125	314	В	.90
99	Studebaker	4.6	"Special Six," SH, EH	1919-21	36102	1.000	316	D	.80
100	Studebaker	4,6	EJ	1921	43312	.6875	213	F	.70
101	Stutz	4	G, Series H	1918-20		1.125	334		1.50
102	Templar	4	4-45	1918-21		1.000	218	E	.90
103	Vim Truck	4	14, 16, 18, 21, 29, 30	All	2454	.860	234	A	1.00
104	White Truck	4	GE, GEC, GEB, GF, GB, GFC, TBA, TDR, TC, ATC, ATCD	1912-19	0124GE	1.110	4	F	1.40
105	White Truck	4	15-40, 20-40, GO, 3%	1919-21	0124GO	1.1875	31/2 37/4	F	1.25
106	White Truck	4	45, D. 15-45, 20-45 GN	1919-21	0124GMB	1.375 1.047		В	1.50 1.25
107	White Truck	4.	GK, D	The second	21170	-	31/2	Oil Gry	CO-COMPANIES.
108	Willys-Knight	8	88-8 88-4		24470 25269	.9375 1.0625	31/8	Oil Gry	1.10
109	Willys-Knight Willys-Knight	4	20	1920	27418	.9365	314	D	.90
111	Winton	6	22, 24	10 A 10	2275	1.125	4 %	D	1.35
1112	Winton	6	2A. 22A. 25		22A49	1.000	3.5	D	1.10

### STANDARD MOTORS

Below are listed the names of standard motors used in several hundred different passenger cars, trucks and tractors. Part of the current assemblies in which they are used are named on the following pages in alphabetical order and the motor used in each indicated. To find the number and price of a pin, locate in the alphabetical list the name and model of car or truck desired, following which is shown the number of the pin used. Then turn to the motor list below where the price of pin may be found in column opposite number.

Stock No.	Name of Car	No. o		Car Mfgrs. Part No.	Standard Diameter	Size Length	Туре	Price
301	Buda	1	XTU		1.250	4	CCCC	\$1.35
302	Buda ·	4	YTU, YU		1.250	313	C	1.35
303	Buda	4	HU, HTU, ITU, IU	An inches in the	1.125	3 1/8	C	1.20
304	Buda	4	T, TU	AN ADDRESS OF THE PARTY NAMED IN	1.0625	311	C	1.15
305	Buda	4	CTU		1.0625	314		1.15
306	Buda	4	RU, WU		1.0625	318 314 314 314 314	C	1.15
321	Continental	6	7-R	7-RA-106	.860	3 16 3 16 3 16	B A B	.80
322	Continental	6	7-K, 7-W, 8-W	7-WA-103	.875	312	A	.80
323	Continental	6	8-A		1.125	376	В	.95
324	Continental	4-6	6-A, 6-H, 6-N, 7-D, 7-H, 7-N,					
924	Continental	1.0	8-D, 8-H, 8-N, N-31/2	6AA-202	1.0937	3 78	A	.90
325	Continental	6	9-N	9N-202	1.1567	31/4	A	.95
326	Continental	4	CA. C-2, C-4	CA-232	1.2185	334	A	1.40
327	Continental		A-202, B-2	and a fact of the same of the same	1.375	3 1/4 3 1/4 3 3/4 4 1/4 4 1/4 3 1/4	A	1.40
328	Continental		E, E-4	EA-215	1.4375	4 %	A	1.40
329	Continental	4	N-3%, NA, N	NA-209	1.0937		A	.90
341	Falls	6		8029	.741	2,%	D	.75
342	Falls	6		6509	.741	2 12 2 11 2 11	D D	.75 .75
-			11000	THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN COLUMN TW	.875		D	
350	Hershell Spillman	6	11000		.875	3 314	D	.80
351	Hershell Spillman	Jan Hand	7000		1,250		-	
361	Hercules		M U 3		1.125	314		1.40
362	Hercules		C U 2		THE RESERVE AND ADDRESS OF THE PARTY OF THE			1.15
381	Lycoming	4	I.		.875	3 14	CC	.75
381 382	Lycoming	4	L K		.875		C	
401	Northway	8			.855	31/4	A	.80
402	Northway	a			1.000	4		1,25
403	Northway	6-8			.668	2.4	A	.65
104	Northway	6			.668	2,7	D	.65

Broken Sets. 254 P. C. Full Sets. 337 P. C.

Stock No. of	Car	Mfgrs. Standard Size
No. Name of Car Cyls. N		-t No. Diameter Length Type Price .750 213 B \$0.70
441 Waukesha P, P	U-4, PU-7	1.500 4 1.60 1.250 376 1.50
443 Waukesha N.	U-4, RU-4R NU-4R	1.250 4 1.50
444 Waukesha T. 7 445 Waukesha 4 B. E	U-4, BX, BUX, BUXE	1.000 376 1.15
461 Wisconsin 4 CAU		1.1875 3 % 1.25 1.1875 3 % 1.35
463 Wisconsin 4 VAI		$\begin{array}{cccccccccccccccccccccccccccccccccccc$
PASSENGE	R CARS	Stock
USING STAND		Name No.
Name Stock No.	Name Stock	Princess Pat
Abbott, 6-44, 1917-19	Kline, 6-55, 1920-21	Reed A 15-30
American, C60, 1921	Leach, 6-20-20A325	Samson D Iron Horse
Anderson, 200-400 Series, 1917-19322 Amco, 4 cyl., 1920-21351	Lexington, 6, 1920. 321 Lexington, 1917-18-19-20. 322 Liberty, W, 1916-17-18. 322	Shawnee 6-12
Arbenz, 25	Liberty, W. 1916-17-18. 322 Lone Star Beauty, 4, 1920-21. 382 Lorraine, 4, 1920-21. 351	Toro Cultivator 6-10
Auburn, HR 39, 1920-21		Traylor DB 6-12
Auburn, 63, 1914324	Maihbone, 6	Vim B 10-20445
Beggs, 20 T, 1920-21	Marion Handley B. 1917-19	TRUCKS USING STANDARD
Bell, 4-32, 6-50, 1920-21	Metz Master Six	Ace, 1½ Ton
Birch, 6-45	Moon, 6-48, 1919-20	Ace, 2½ Ton. 303 Acme, B, 1 Ton. 329
Birch Super Four Forty, 1918	Napoleon 6 1915-19 322	Acme, A, 2 Ton
Bour Davis, 18B, 1917-19	Napoleon, 4-30, 1917. 382 National, 6 AF, 1919-21. 325 National, 6 HY, 1917. 322	Apex, G, 1 Ton.       382         Apex, D, 1½ Ton.       306         Apex, E, 2½ Ton.       303
Bush, 6, 1921, using Rutenberg. 421 Bush, 6, up to 1926, using Cont. 322		Apex. F. 31/6 Ton
Bradley, 4, 1920-21382	Noma, C, 1920-21	Armleder, HW, 2½ Ton
Case, 6-50, 1918	Ockland 25-28-45-50 1915-17 401	ATCO 3, Ton
Cole, 8, Aero, all models	Oldsmobile, 6-55, 1915	Atterbury, 7X, 2½ Ton. 326 Atterbury, 7D, 3¾ Ton. 328 Atterbury, 8E, 5 Ton. 327
Champion Tourist	O'dsmobile, 41-44-45-45 A	Beck Hawkeye C 2 Ton
Colonial, 535	Paige, 6-51324	Passamer 1 and 114 Ton 399
Columbia, 1919-21 Columbia, 6, 1917-18-19 322 Columbia, 1920 321	Paige, 36-38-39, 1917-18-19	Bessemer, J2, 2½ Ton 326 Bessemer, K2, 4 Ton 328 Bridgeport, C. 2½ Ton 303
Comet. C 52-53, 1918-20,	Patterson, 1916-20	Brinton, F, 2 Ton
Commonwealth, 44, 1921	Piedmont, 4-30, all years. 382 Piedmont, 6-40, all years. 322	Brockway, T5, 5 Ton
Crawford, 6-40, 1921	Pathfinder, 6	Climber, A 20, 1½ Ton
Crow, Elkhart, 4, 1917-21, 382 Crow, Elkhart, 6, 1919-21, 421 Crow, Elkhart, 8, 63-65, 1921, 350	Premocar, 6-40A342	Collier, 18, 19, 1-11/2 Ton
Curtis, 4-45, 1920-21	Raleigh, A-6-60	Climber, A 20, 1½ Ton
Davis, 61-67, 1920-21321	Roamer, 6-54, 1921	Corbitt, B. C. 2-2½ Ton326 Corbitt A 316 Ton328
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Elgin, H & K	Stanwood Six, 1920-21321	Day Elder E 5 Ton
Ferris, C. 20, 1921352	Texan, C, 12, 1921	Dearborn, F. 48, 1½-2 Ton
Cardner G 1920-21382	Texan, A. 38, 1921	Denby 25, 3 Ton
Geronimo, A-45, 1918-21, 421 Ghent, 6-40, 1917, 421	Velie, 34, 1920-21342	Dependable, D. E. 2-2½ Ton.         303           Dependable, G. 3½ Ton.         302           Diehl, A. 1 Ton.         329
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Grant, 6K-17341	Vogue, 6-55, 1921	Douglas, G. 1½ Ton
Halliday, 1918-19	Washington, 1921	Erie, 2½-3½ Ton303
Hamlin-Holmes, 1921	Wescott, B38-C38, 1920-21	Fageol, 3400, 1½ Ton
	Wescott, C48, 1921	Federal, X
Hanson, 60, 1918-13 Hatfield, A, 42, 1921 251 Hollier, 206-206B, 1917-19 322 Hoffman, 6, 1929-21 321 Hoffman, 6, 1929-21 321	TRACTORS USING STANDARD	Federal, UE, TE, 116-2 Ton
Harvard, 6A, 1916	Allis-Chalmers 6-12303	Federal, SD, 1 Ton, 1920. 329 Federal, UE, TE, 414-2 Ton, 326 Federal, WE, 314 Ton, 325 Forschler, A. C, 1-114 Ton, 329 Forschler, D and E, 2-3 Ton, 326 Follows C, 1 and 2 Ton, 351
Hudson, 6-40, 1915-16	Appleton 12-60	Funton, A-C, I and 2 Ton
Tankan 6 26 1919-90322	Cleveland Cletrac 1918-20	Garford, 25 B. 14 Ton
Jackson, 6-55, 1920-21	Common Sense 8	Garford, 77 D. 3½ Ton
Jordan, N. 1921	Dart Blue Jay TE 15-30	Gary, KT, 3½ Ton
Jordan, 7 Pass., 1921	Evans 18-30302	Gersix, L, 3 Ton
Kelsey, GF, 1921	Fageol 9-12	Gramm-Bernstein, 15-65, 11/2 Ton329 Gramm-Bernstein, 20, 2 Ton326
Kennordiy, 5-50, Asserting	Broken Sets, 256 P. C. Full Sets, 339 P. C.	

TRUCKS USING STANDARD	
MOTORS—Cont'd.	Stock
Name  Hahn, J-4, 2 Ton.  Hahn, CD-DE, 1½-2 Ton.  Hahn, EE-F, 2½-3½ Ton.  Hahn, FE, 5 Ton.  Hall, 3½ Ton.  Hall, 5 Ton.  Harvey, WFA, 2½ Ton.  Harvey, WHA-WKA, 3½-5 Ton.  Hawkeye, K, 1½ Ton.  Hendrickson. I-J, 2½-3½ Ton.  Hoover, ¾ Ton.  Huffman, B, 1½ Ton.  Huffman, C, 1½ Ton.  Huffman, C, 1½ Ton.  Hurburt, 1½-2½ Ton.  Hurburt, 3-5 Ton.	No.
Indiana, 12, 1¼ Ton Indiana, 51, 5 Ton Italia, 5 Ton  Jumbo, 35-40, 3½ Ton	302
Kearns, 1½ Ton. King Zeitler, 2 Ton Kleiber, A-AA-BB, 1½-2 Ton. Koehler, D, 1½ Ton. Larabee Devo, K, 2½ Ton.	350 326 326 351
Larabee, Deyo, W, 5 Ton. Lange, B, 2 Ton Luedinghaus, C, 1 Ton. Luedinghaus, W, 1½ Ton.	327 326 351 445
McDonald, A, 5½ Ton. Maccar, L, 1½ Ton. Maccar, G, 5 Ton Master, D DL W WL, 2½ Ton. Master, A AL E EL, 3½ Ton. Moreland, 21G-21-J, 4-5 Ton.	326 327 303 302 327
Napoleon, 6¾ Ton  Nelson Le Moon, 1½-2½ Ton  Nelson Le Moon, 3½ Ton  Nelson Le Moon, 5 Ton  Netco, D, 2 Ton  Niles, E, 2 Ton  Noble, C40, D50, 2-2½ Ton	351 326 328 327 326 326
Ogden, A, 1 Ton. Ogden, E, 2½ Ton. Ogden, G, 5 Ton. Old Hickory, W, 1 Ton. O. K., 2¼ Ton.	329 326 323 329
Pittsburg, B, 2½ Ton. Rainer, R16, R19, 1-1½ Ton. Rainer, R18, 2 Ton. Rainer, R19, 5 Ton. Reliance, 10A, 20B, 1½-2 Ton. Republic, 7, ¾ Ton. Republic, 10E, 11X, 1-14, Ton.	326 329 326 327 303 382
Republic, 19, 234 Ton.  Republic, 20, 3½ Ton.  Sandow, G-GG, I, 1-1½-2 Ton.  Sandow, J, 2½ Ton.  Sandow, M, 3½ Ton.  Sanford, W, 25, 2½ Ton.  Sanford, W, 25, 50, 3½-5 Ton.  Sanford, W, 35, 50, 3½-5 Ton.  Schacht, 2-2½ Ton.  Schacht, 3½-5 Ton.  Schacht, 3½-5 Ton.  Schartz, A, I Ton.  Schwartz, A, I Ton.  Schwartz, 4 Ton.  Selden, A, 1½ Ton.  Selden, A, 2½ Ton.  Selden, A, 3½ Ton.  Selden, A, 5 Ton.  Service, 76-101, 3½-5 Ton.  Signal, H-J, 1½-2½ Ton.  Signal, H-J, 1½-2½ Ton.  Signal, H-J, 1½-2½ Ton.  Signal, R, 5 Ton.  Southern, 10, 1 Ton.  Southern, 10, 1 Ton.  Southern, 10, 1 Ton.  Southern, 10, 2 Ton.  Standard, 1K, 1 Ton.  Standard, 76, 2½ Ton.  Standard, 5K, 5 Ton.  Standard, 5K, 5 Ton.  Standard, 5K, 5 Ton.  Standard, 5K, 5 Ton.  Stewart, 7, 2 Ton.  Stewart, 10, 3½ Ton.  Stewart, 10, 1½ Ton.  Stewart, 10, 3½ Ton.	329 326 328 328 302 302 302 302 302 329 326 327 303 326 327 306 327 306 329 326 327 302 327 302 328 303 302 302 302 303 302 303 302 303 303
Stewart, 10, 3½ Ton. Stewart, 10X, 3½ Ton. Stoughton, A-B, 1-1½ Ton. Success, B, 2½ Ton. Superior, D, 1 Ton. Superior, E, 2 Ton. Trabold, 2½ Ton. Tiffin, MW-GW, 1½-2½ Ton. Tiffin, PW, 3½ Ton.	.328 .302 .445 .326 .329 .326 .303 .326 .328

Name	Stock No.
Tiffin, TW-UW, 5 and 6 Ton Titan, 3½-5 Ton Tower, J-H, 1½-2½ Ton	302
Tower, G, 3½ Ton. Triangle, AA, ¾ Ton. Triangle, A-C, 1½-2 Ton. Traylor, E, 4 and 5 Ton.	328
Ultimate, B, 2½ Ton	303
Wilcox, E, 3½ Ton. Winther Delivery Special. Witt Will, N-P, 1½-2 Ton. Wichita, L-M-R, 1½-2-2½ Ton.	351
Wolverine, 1 and 1½ Ton	

### Method of Packing.

Pins are dipped in Rust Proof Oil, covered with oil paper and packed (4, 6, 8 or 12) in cartons according to motor requirements. Packed also in cartons of 25, 50 and 100. Cartons are properly labeled, indicating motors pins serve.

### Standard and Oversize Identification.

GreenStar	dard
Yellow	.003"
Red	.005"
Blue	.010"
WhiteSI	ecial

In addition to stamping the oversize in plain figures, labels of colors indicated above are used on the oiled paper wrappers around each pin and on the cartons in which they are packed, so that their identification is easily possible any time.

### Types of Pins.

A-1 set screw hole, 2 oil holes.

B-1 set screw hole.

C-1 set screw hole, 1 oil hole.

D-Center slot, end slot.

E-Plain.

F-End slot, 20.1 holes-1 screw hole.

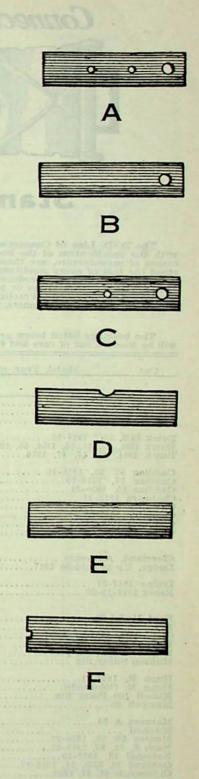
G-Center slot with oil grooves.

In the opposite column are shown the several standard types of pins. The letters used to indicate these types will also be found in preceding price list. This will be of assistance to the dealer in many cases, as a pin may be required for a car that has used several different motors and if type of pin to be replaced is known, the proper replacement can be selected more readily.

We furnish pins of special type or size not listed. For such items following list applies:

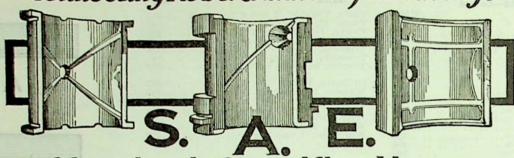
Up	to	7/8"	diam\$1.00
Up	to	11/4"	diam 1.50
Abo	ve	11/4".	Special

Be sure to give full information in ordering items not listed.



When ordering it is only necessary to give our stock number and oversize, if any. For illustration, to order pins for Overland 90, refer to Overland 117 list of Individual Motors, where it will be found; our stock number on this model is 69. If oversize of same pin is wanted, specify 69-3 for .003 oversize, 69-5 for .005, etc. Standard sizes are always shipped unless otherwise specified.

## Connecting Rod & Crankshaft Bearings



## Standard Specifications D-D-Line

The D.-D. Line of Connecting Rod and Crankshaft Bearings and Bushings is produced in all cases in accordance with the specification of the Society of Automobile Engineers. The metals and alloys employed, as well as the processes of manufacture, are those which have met with the approval of the best brains in the industry and have stood the test of every condition of internal combustion motor service.

These bearings are produced by the leading manufacturers of Babbitt lined and Die Cast Bearings in the United States, and no freak alloys or processes are employed. No attempt is made here to list all cars and trucks for which bearings are furnished. Practically all current models are given, however. A Douglas-Dahlin Bearing Directory will be furnished all customers, giving more complete information covering all models.

### INDIVIDUAL MOTORS

The bearings listed below are not interchangeable numbers but fit only the assemblies named. Following this

Car	Model, Year, etc.		necting Rod		ont kshaft		nter kshaft		ear kshaft	Pistor Bush	n Pin
-		No.	LIST PER PAIR	No.	LIST PER PAIR	No	LIST PER PAIR	No.	LIST PER PAIR	No.	LIST
Allen 43, 192	20-21 3. 15	63051	3 \$2 40		\$6.40	63071	3\$5.20		\$6.40		
Briscoe 34		66651	3 2.88	6666B	3.95 Transm	6667E	2.97	6668B	4.04		
Buick 25B, 2	5C, 1914-15 7, 38, 55, D54, 55, 1914-16	6470	1.74		5.20		6.40		5.76	6474	\$ .60
Buick D44,	45, 46, 47, 1916	6290	1.49	6291B	4.80 Center.	6292B	4.80	6293B 6294	5.76	6289 6294X	2
Cadillac 51,	53, 1915-16 1918-19	6440H	3 4.00		7.50		7.50		12.00	6444 6434	4
Indillag 50	1990-91	64301	3 5 90	6436B	8.00	6437E	8.00	6438B	12.00	6679B	
Chandler 191	16-21 6-17 7-21	6255	1.67	6256	3.20	6257	3.44	6258	3.44	6259	)
handler 191	7-21 0, All years	6220I	3.10						2.98	6224	6
chevrolet 49	U, All years	6125	1.18	Valve	Rocker	Arm E	3 2.80 Bushing.	6128	1.50	6129	i
Cleveland, A	ll yearso middle 1917	6275	1.56	6276	3 56	6277	ng 3.92	6278	3.87	6129X 6279	5
				6351B Rear	3.42 Transmi 2.68	6352B	3.20	6353B	3.70		4
Oodge 1917-1	219-20	63451	B 2.30	6346B	5.28	6347E	2.78 3 5.54	6348B	2.78	J349	4
3550A 1010-1	20		0.00	P. P.	Bushing	1918-	20			6319 6319X	3
Ford Model	T	6095	96							6099	1
Tlobe Pin 1	8-21 921	6695	4.50								
daynes b cy	L, All years	00401	D 3.30		7.00		6.56	6048B	8.00		
	er Six				4.40 Center	6322E	3 5.44		5.86		
Hupp R, 191	17-21d model	63351	B 2.26 B 2.71		3.20	6337E	3 3.20	6338B	3.20		
Kissell 100 l	Point Six	66101	B 3.12	6611B	3.96 3.12 C	6612E	3 4.68 5.24	6613B	5.44	6524	
	4							6523B	6.52	6499	
ditchell	0, 1920-21	6595	2.50							6499	
Yash 6, 81,	87, 1918-21	6555	2.75	6166B	4.68	6167E	4.68	616813	4.68	6169	6
National 12, Dakland 32,	87, 1918-21 1917-19 32B, 34, 1916-17 6, 47, 1920	6260	B 5.60	6091B 6261	6.12 2.43 5.56	6262	3 6.48	6093B 6263	6.40	6264	
				6386B (Righ	t Main)	6387E	3 6.96 t Main)				3
Overland 4,	1919-21 75B	6215	1.10	6216	1.74	6216	1.74	6217	2.36	6214	
Overland 83	85 4 cvl 37 45	6205	1.80							6309	
Paige 6, 66.	1919-20 1920-21	6740	B 3.44							6744	
Packard 6, S	3, 25, 35 eries 116, 1920-21 v 6, 38; 24 Valve, 1920	6560	B. 4.40							6174	
										6384	6
Premier 6, D Saxon 4, 191	0. 1920-21 4-17	6065	B 2.00							6154	5
Saxon 4, 191	4-17	6065	B 2.12								
stephens	Light 4, 1919-21	6570	B 3.00							427142	
				Rear	Center.		4.60	6513B	5.00 4.60 6.96	6514X	
Stutz 16 Val	ve	6075	5.20	6076E	5.53	6077E	3 5.04	6078B	6.96	6079	

### PASSENGER CARS

Name	Motor Used	1 Name	Motor Used
		MARK TRANSPORTER TO THE PROPERTY OF THE PROPER	
Abbot 6-44, 1917-19	Cont. 7W	Jones, B-23,1919-20	Cont. 9N
Ace, L, 1921	H-SP 11000	Jordan, M, 1920	Cont 7D
American, C60, 1921	Put 22-25	Jordan, 7 Pass., 1921	Cont ON
Anderson 30-40 1920-21	Cont 7P	Jordan, 1 Lass., 1021	Cont. 3N
American Beauty Six, 1917-19 Anderson, 30-40, 1920-21 Anderson, 200-400 Series, 1917-19	Cont. 7W	Kelsey, GF, 1921	Falls 6
Amco. 4 cvl., 1920-21	H-SP 7000	Kenworthy, 6-55, 1920	Cont 9N
Arbenz, 25	Lyc. Du-L	Kline, 6-55, 1920-21	Cont. 7R
Auburn, 61, 1918-20	Cont. 7W	Kline, F-GH, 1917-18-19	Cont. 7W
Auburn, HR 39, 1920-21	Cont. 7R		
Auburn, 6-39, 1916-17-19 using	Rut. 23-25	Leach, 6-20-20A	
		Lexington, 6, 1920	Cont. 7R
Beggs, 20 T, 1920-21	Cont. 7R	Lexington, 1917-18-19-20	Cont. 7W
Beggs, 18 'F, 1918-19	Cont. 7W	Liberty, W, 1916-17-18	·····Cont. 7W
Bell, 4-32,6-50, 1920-21	H-SP	Lone Star Beauty, 4, 1920-21	Lyc. K
Bell, 4 cyl. 1918	La Pai 2 C	Lorraine, 4, 1920-21	H-SP 7000
Birch, 44-66, 1920-21	H-SP 11000	McFarlan Six, 1917-20	Teetor Hartly
Birch Super Four Forty, 1918	Lvc. K	Madison, 6, 1917-20	Rut 23-25
Bour Davis, 1921 Bour Davis, 18B, 1917-19	Cont. 9N	Marion Handley, A, 1916-17	Rut. 23-25
Bour Davis, 18B, 1917-19	Cont. 6N-7N	Marion Handley, B, 1917-19	Cont. 9N
Bour Davis, 17 and 17B, 1916-19	Cont. 7W	Metz Master Six	Rut. 23-25
Bush, 6, 1921, using Rutenberg	Rut. 23-25	Monitor Series 3, 1920-21	Cont 7R
Bush, 6, up to 1920, using Cont	Cont. 7W	Moon, 6-48, 1919-20	Cont. 7R
Bradley, 4, 1920-21	Lyc. K	Moon, 6-68, 1921	Cont. 9N
Charmelet Daler Grand	Chan Nan		a -
Climber, 4 and 6, 1920	Chev. Nor.	Noma, A. B., Prior 1920	Cont. 7W .
Cole, 8, Aero, all models	309 Nor	Noma, C, 1920-21	Cont. 1R
Case 6, 1918-19-20	Cont. 9 N	Norwalk, 4-30, K. S. 1919-21 Norwalk, 4-30, 1921	Bude HII HTII III
Champion Tourist	Lvc. K		
Champion Special	H-SP	Oakland, 34B, 34C, 1918	Nor. 6 cyl.
Cole. 8. 1915-16	Nor 308	Oakland, 34B, 34C, 1918 Oldsmobile, 8, old model, 1916-20	Nor. 308
Columbia, 1919-21	Rut. 23-25		
Columbia, 6, 1917-18-19	Cont. 7W	Paige, 6-51	Cont. 7N
Columbia, 1920	Cont. 7R	Parge, 36-33-39, 1217-13-13	H-SP 11000
Common wealth, 44, 1921	Cont. 9 N	Patterson 1916-20	Cont. 7W
Commonwealth, 40-42, 1918-20	Lvc K	Pan American, 6-55, 1919-21 Patterson, 1916-20 Pennsy, 6-21	Cont. 7R
Crawford, 6-40, 1921	Cont 9N	Pledmont, 4-30, all years	Lyc. A
Crawford, 6-40, prior 1921	Cont. 7W	Piedmont, 6-40, all years	Cont. 7W
Crow Elkhart 4 1917-21	I vo V	Pilot, 6-45	Teetor
Crow Elkhart 6 1919-21	Put 22-25	Pilot, 6-50, 1921 Premocar, 6-40A	Falls 6
Crow Elkhart, 8, 63-65, 1921	H-SP 11000		
Curtis, 4-45, 1920-21	H-SP 7000	Raleigh, A-6-60	H-SP 11000
	a 1 m	Revere, C, 1920-21	Roch. Dues.
Davis, 61-67, 1920-21	Cont. 7R	Revere, C, 1920-21 Roamer, 4-75E Roamer, 6-54, 1921	Roch. Dues.
Davis, 6, 1917-18-19-20	Cont. 7W	Roamer, 6-54, 1921	Cont. 3N
Dixie Flyer H. S. 70, 1920-21 Dort, 5-6-7-9, 1916-17	Lvc DII	Saxon Six. 1916-19	Cont. 7V
Dort, 8-10-11-15-39-17-18-19-17a, 192	L. Lvc. K	Saxon Six, 1916-19. Sayers, 6, 1917-20. Scripps Booth, F43-46, 1921. Scripps Booth, 1918-19-20, 4 cyl	Cont. 7W
2010, 0 10 11 10 00 11 10 10 110, 102		Scripps Booth, F43-46, 1921	Cont. 7R
Economy, 6-46, 1919-20	Cont 7W	Scripps Booth, 1918-19-20, 4 cyl	Chev.
El Car, 4, 1917-21			
El Car 6 1920-21	Cont 7R	Severin, 6H, 1921 Sheridan, 4, 1920-21	Chev
Elgin, K	Falls 6	Sheridan 4, 1920-21	Nor. 308
		Sheridan, 8, 1921 Skelton, all years Southern Six Sixty, 1921 Stanwood Six, 1920-21	Lyc. K
Ferris, C, 20, 1921	Cont. 9N	Southern Six Sixty, 1921	H-SP 11000
Gardner G 1920-21	Lvc. K	Stanwood Six, 1920-21	Cont. 7R
Geronimo, A-45, 1918-21	Rut. 23-25		
Ghent, 6-40, 1917	Rut. 23-25	Texan, C, 12, 1921. Texan, A, 38, 1921.	H-SP 1000
Ghent, 6-60, 1918	Cont. 7N	Tulsa, 1920-21, 6F	H-SP 11000
Glide, 6-40, 1917-18-19	Rut. 23-25		
H. C. S. Series, 2, 1920	Weldely M	Velie, 34, 1920-21 Velie, 48, 1920-21	Falls, 6, New
Halliday, 1919-20-21		Velie, 48, 1920-21	Cont. 7R
Halliday, 1918-19 Hamlin-Holmes, 1921	I vc. K	Velie, 22, 27, 28, 38, 39, 1916-19 Vogue, 6-55, 1921	Cont. (W
Hanson, 6, 1920-21	Cont. 7R	Vogue, 6-55, 1921	Cont. 9N
Hanson, 60, 1918-19	Cont. 7W		
Hatfield A 42 1921	H-SP 7000	Washington, 1921. Wescott, B38-C38, 1920-21 Westcott, 6, 1916-19. Westcott, C 48, 1921.	Falls 6
Hollier 206-306B 1917-19	Cont. 7W	Wescott, B38-C38, 1920-21	Cont. 7R
Hoffman, 6, 1920-21	Cont. TR	Westcott, 6, 1916-19	Cont. 7W
Jackson 6-38 1919-20	Cont. 7W	Westcott, C 48, 1921 Winther, 6-61, 1920-21	H-SP
Jackson, 6-55, 1920-21	Cont. 7R	winther, 0-01, 1320-21	11-51
	mp 4.6	MORG	

### TRACTORS

Name	Motor Used	Name	Motor Used
Allis-Chalmers 6-12Appleton 12-60	Le Roi 2 C-21-9 Buda HU HTU IU	Parret J 6-12Planet Jr. Cultivator 5-10Prairie Dog 10-18 L	.Le Roi 2C-21-9
Chase 12-25	. Euda R RU WU	Princess Pat	. Buda HU HTU IU
Cleveland Cletrac 1918-19-20 Common Sense 8	. Weidely M	R. & P. Model 2	. Wauk. B BX BUX . Wauk. DU
Dart Blue Jay TV 15-30 Dart Blue Jay TV 15-30	Buda VII VIII AIU	Samson D Iron Horse	. Chev.
Evans 18-30	. Buda YU YTU XTU	Stockton A 8-16	.H-SP
Fageol 9-12	. Lyc. K . H-SP	Toro Cultivator 6-10	Le Roi 2C-21-9 Le Roi 2C-21-9 Buda HU HTU IU
Heider Cultivator 6-10	.Le Roi 2C-21-9	Vim B 10-20	
Master Jr. 5-10	Le Roi 2C-21-9	Yuba Ball Tread 12-20, 1917-21	.Wauk. LMP LU 4-7

# TRUCKS USING INDIVIDUAL MOTORS

Car Model, Y	ear, etc.	Connecting Rod	Front Crankshaft	Center Crankshaft	Rear Crankshaft	Piston Pin Bushing	
		No. PER PAIR	No. PER PAIR	No. PER PAIR	No. PER PAIR	NO, EACH	
Auto Car  Bethlehem 1½ Ton Truck Bethleham 2½ Ton Truck Garford 68, 77C, Truck Indiana 35, 3½ Ton International 34-1 Ton F. International 2 Ton Truck International 1 Tractor International 1 Truck International 1 Truck International 1 Truck International I Truck Melly Springfield K 30 Tr Kelly Springfield K 40 Tr Kissell General Utility Tr Mack Small Truck Mack Large Truck Nash Quad 1 and 2 Ton, 1 Packard E F 5 Ton Truck Vim 27, 28 ½ Ton Truck White Large 5 Ton Truck White 15 3 Ton Truck White 40, 43, 3 & 5 Ton W	H. K. Truck. k	6475 2.80 6480 3.75 6015B 4.52 6055B 5.40 6580B 5.48 6585B 4.20 6590B 9.02 6700B 6.00 6020B 3.70 6010B 5.96 6030B 3.58 6325B 5.74 6330B 6.28 6450 4.60 6565B 5.90 6355B 3.91 6080 1.92 6130B 4.45 6130B 4.45 6130B 4.45	6476 \$3.75 6481 4.50 6016B 4.31 6021B 5.16 6011B 8.68 6031B 4.02	6477 \$3.00 6482 4.50 6017B 4.31 6012B 5.16 6012B 8.86 6032B 4.12	6478 . \$6.50 6483 . 4.50 6018B . 5.70 6023B . 6.96 6013B . 8.76 6033B . 5.64	6014 .62 6569 1.08 6359 .56	

#### STANDARD MOTORS

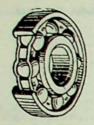
Below are listed the names of the standard motors used in several hundred different passenger cars, trucks, and tractors. Part of the current assemblies in which they are used are named on the following pages in alphabetical order and the motor used in each indicated. To find the number and price of a bearing, locate in the alphabetical list the name and model of car or truck desired, following which is shown the name of the motor. Then turn to the motor list below where the number and price of bearings used in that motor are given. In case several models of one manufacturer use the same bearings, the name or number of all is given, as: Buda YU YTU XTU.

Car	Model, Year, etc.	Connecting Rod	Front Crankshaft	Center Crankshaft	Rear Crankshaft	Piston Pin Bushing
	NI PAN	NO. PER PAIR	No. PER PAIR	No. PER PAIR	LIST No. PER PAIR	No. EACH
Beaver 4 cyl		6040 3.12	6041B 4:44	6042B. 4.20	6043B. 5.40	
Roomer MI.	A cvl	6085 2.08	00111511 1.11	001213 1.20	0010101110110	45.000.000.000
Dude D DI	T TITTE A CVI	6140B 3.22	6141B., 4.86	6142B., 5.00	6143B 5.42	6144X7
Buda OU. C	U. 4 cyl. HTU, IU. ITU, 4 cyl	6115B 3.45	6116B 5.08	6117B 4.96	6118B 6.18	61198
Buda HU, H	HTU, IU. ITU, 4 cyl	6195B 4.24	6196B 5.56	6197B 5.66	6198B 6.60	6199X8
			6201B 5.90	6202B 6.25	6203B 6.90	6204X9
uda CTU,	DTUBTU	6690B 5.50				
herrolet 4	cv	6110B 3.26				
Continental	B 2, 4 cyl	6070B 8.20	6071B 8.20	6072B 8.20	6273B 8.20	6074 1.0
continental	C 4, 4 cyl	6280B 3.90	6281B 4.40	6282B 5.80	6283B 5.70	62848
			6146B., 4.46 6176B., 4.62	6147B 5.70 6177B 6.60	6148B 5.90 6178B 6.42	6179 1.2
continental	E 4, E 7, 4 cyl	6240B 3 16	6241B., 5.80	6242B., 5.80	6243B 5.80	0113 1
continental	7 R 6 CV	6270B 3.02	6271B 5.90	6272B 3.30	6273B 5.42	6274
continental	7 W. 6 cyl	6100 1.39				
ontinental	7 W 6 cvl	6100B 2.92	6101B 4.94	6102B 4.72	6103B 4.94	6104
continental	7 V. 6 cvl	6235 1.42	200.00		2/22/2000	*********
ontinental	N, 8 N, 4 cyl	6120B 3.09	6121B 4.68	6122B 5.04	6123B 4.92	6224
ontinental	6 AG, 6 H, 7 H, 6 cyl 9 N, 6 cyl	625012 2 22	6121B 4.68 6251B 4.86	6122B 5.04 6252B 4.20	6123B 4.92 6253B 5.38	6124
Continental	J 4, 4 cyl	6535 4 91	02315 4.00	6252B 4.20	020015 0.00	6539
alls 6 XE	Old, fits 1% inch	6160 1.32				
Calls 6 XE	New Model 6 cvl	616013 2.19	6161B 3.98	6162B 3.56	6163B 5.38	
olden Dalle	non Schwartz EDM & C	6190 149				
rey X 231.		6725 1.63				
rey X 231.		6725W 1.74				6579
linkley HA	A, 300, 400, 4 cyl	6035 236				6039
lerschel-Spi	illman 7000-11000	6035B 5.50	6036B 8.00		6037B 8.00	6039
e Roi 2C. 2	21, 9, 4 cyl	6180 1.74	6181 2.50		6182 2.50	6184
e Roi 2C	4 cvl	6180B., 2.50				
ycoming K	. KA, 4 cyl	6295 1.63	6296 2.74	***********	6297 2.74	6299
veoming D	U. I. 4 cvl	6060 1.80				
orthway 30	8, 1915-16; 208, 209, 1916-17-	18-20.6225B 5.80	6516 2.04	6517 1.98	CE10 0.00	2010
orthway 6	cyl., 1918-21	6230B 5.78	0310 2.04	0517 1.38	6518 2.08	6519 6234
orthway 5	2, 54, 4 cyl	6455 . 2.75			*************	0204
ochester D	usenhere 1 cv!	6620 3.82				
A-V MA	1911 BC 14 17	6850B. 3.56				ACCES COUNTY
utenberg 2	3, 25, 6 cyl	6245 1.49	6246 3.04	6247 2.68	6248 2.82	6249
terling 4 c	vl		6426 2.96		6427 3.08	
ector Harle	ey 6, 43, 6 cyl	6405 P 4 90	6405D 4.90	6406D F 60	eaner Fee	
Vaukesha I	DU, 4 cyl	6410B 5 20	6405B 4.80 6410B 5.20	6406B 5.60 6411B 6.40	6406B 5.60 6411B 6.40	*********
Vaukesha I	3, BX, BUX, 4 cyl	6400B 3.92	6401B. 5.60	6402B. 4.86	6403B. 5.60	6404
Vaukesha (	CII FU 4 cvl	6415B., 5.90	6415B 5.90	6416B 5.20	6416B., 5.20	0101
Vaukesha I	C, CU, FU, 4 cyl M, P, LU4, 7, 4 cyl	6395B 7.00	6396B., 8.00	6397B 8.00	6398B. 4.50	6399
waukesha (	J. R. B. N. 4 CVI	042UD 4.03	6421B 6.40	6422B 6.40	6423B 4.00	6424
vaukesha .	JU. 4 cyl	6640B 6.40		,		6424X
Weidely M.	4 cyl	6105 2.85				6109

# CURRENT MODELS TRUCKS

Name	Model, Year, etc.	Name	Model, Year, etc.
Acason R, RB, 1, 1½ Ton Acason H, L, 2½ and 3 Ton	Wauk, B BX BUX	Kalamazoo G 11/2	Ton
Acason H, RB, I, 1½ 10n. Acason H, L, 2½ and 3 Ton. Acason M, 5 Ton. Ace, 1½ Ton. Ace, 2½ Fon. Acme, B, 1 Ton. Acme, F, 1½ Ton. Acme, E, 5 Ton.	Wauk EU	King Zeitler 2 To	on
Ace, 1½ Ton	Buda R RU WU	Kleiber A-AA-Br	1-1½-2 TonCont. C4
Acme, B, 1 Ton	Cont. N	Larabee Deyo K	2½ TonCont. C4
Acme, A, 2 Ton	Cont. C4	Larabee Deyo W	5 TonCont. B2
			Ton
Apex, G, 1 Ton  Apex, D, 1½ Ton  Apex, E, 2½ Ton  Apex, F, 3½ Ton  Armleder, HW, 2½ Ton  Armleder, KW, 3½ Ton  Atterbury, 2OR, 1½ Ton  Atterbury, 7X, 2½ Ton  Atterbury 7D, 3½ Ton  Atterbury, 8E, 5 Ton	Buda R RU WU	Luedinghaus K 2	Ton
Apex, F, 3½ Ton	Buda YU YTU XTU	McDonald A 51/2	TonBuda YU YTU XTU
Armleder, HW, 2½ Ton	Buda HU HTU IU	Maccar L 1½ To	Cont D9
Atterbury, 20R, 1½ Ton	Cont. J4	Master JW 11/2 To	on. Buda OU QU WL 2½: Ton. Buda HU HTU IU EL 3½ Ton. Buda YU YTU XTU 4-5 Ton. Cont. B2
Atterbury 7D, 3½ Ton	Cont. E4	Master A AL E I	EL 3½ TonBuda YU YTU XTU
Atterbury, 8E, 5 Ton	Cont. B2	Moreland 21G-21J	4-5 Ton
Bessemer, 1 and 1½ Ton. Bessemer, 1, 2, 2½ Ton. Bessemer, K2, 24 Ton. Bessemer, K2, 4 Ton.	Cont C4	Napoleon 6% Ton Nelson Le Moon	
Bessemer, J2, 214 Ton	Cont. C4 Cont. E4 E7	Nelson Le Moon	Ton
Bridgeport, C. 21/2 Ton	Buda HU HTU IU	Netco, D, 2 Ton	
Bridgeport, C, 2½ Ton. Brinton, F, 2 Ton. Brockway, S4, 1½ Ton. Brockway, T5, 5 Ton.	Cont. J4	Noble, C40, D50,	H-SP 7000   1½-2½ Ton
Brockway, T5, 5 Ton	Cont. B2	Ogden, A, 1 Ton	
Clydesdale, 18, 20, 34 to 1 Ton	Cont. N 8N	Ogden, E, 2½ To	
Collier, 18, 19, 1-1½ Ton	Cont. N & 8N	Old Hickory, W.	Ton
Commerce, T, 12, 16, 114-2 Ton.	Cont. N & 8N	O.K., 2/2 10h	Buda HU HTU IU
Corbitt, B, C, 2-2½ Ton	Cont. C4	Pittsburg, B, 21/2	Ton
Climber, A 20, 1½ Ton	Cont. E4	Rainer, R16, R19, Rainer, R18, 2 To	1-1½ Ton Cont. N 8N n Cont. C2 on Cont. B2
Dart, W, 3½ Ton. Dart, M, 2 Ton. Day-Elder, A, B, 1-1½ Ton. Day-Elder, D, 2 Ton. Day-Elder, C, 2½ Ton. Day-Elder, F, 3½ Ton. Day-Elder, F, 3½ Ton. Day-Elder, E, 5 Ton. Dearborn, F, 48, 1½-2 Ton. Denby, 12, 33, 134, 1-1½-2 Ton. Denby, 25, 3 Ton. Denby, 210, 5 Ton.	Buda YU YTU XTU	Rainer, R19, 5 To	on
Dart, M. 2 Ton	Buda HU HTU IU	Republic, 7, 34 To	1½-2 Ton
Day-Elder, D, 2 Ton	Cont. C2	Republic, 19, 21/2	Ton
Day-Elder, C, 2½ Ton Day-Elder, F, 3½ Ton	Cont. E4 E7	Republic, 20, 31/2	FonCont. E4 E7
Day-Elder, E, 5 Ton	Buda YU YTU XTU	Sandow, G-GG, I.	1-1½-2 Ton. Cont. N 8N n. Cont. C4 Ton. Cont. E4 E7 2 Ton. Cont. E4 E7 3 1½-5 Ton. Cont. E4 E7 on. Buda HU HTU IU n. Buda YU YTU XTU
Denby, 12, 33, 134, 1-11/2-2 Ton	Cont. N 8N	Sandow, M, 31/2	Fon Cont. E4 E7
Denby, 25, 3 Ton	Cont. C2	Sanford, W, 35, 50	, 3½-5 Ton Cont. E4 E7
Dependable, D. E. 2-21/2 Ton	Buda YU YTU XTU	Schacht, 2 2½ To	nBuda HU HTU IU
Denby, 25, 3 Ton. Denby, 210, 5 Ton. Dependable, D, E, 2-2½ Ton. Dependable, G, 3½ Ton. Diamond T, O-T, 1¼-1½ Ton. Dichl, A 1 Ton. Diehl, B, 1½ Ton. Doane, 3½ Ton. Douglas, G, 1½ Ton. Douglas, G, 1½ Ton. Douglas, 2 and 3 Ton. Duplex, A, 2 Ton.	Hink. HAA 300 400	Schwartz, A. 1 T	on. Lyc. K Buda HU HTU IU Buda YU YTU XTU
Diehl, B. 1½ Ton	H-SP.	Schwartz 4 Ton	Buda YU YTU XTU
Douglas, G. 114 Ton	Buda R RU WU	Selden, A, 1½ To	n
Douglas, 2 and 3 Ton	Buda HU HTU IU	Selden, A, 3½ To	n
Erie, 2½-3½ Ton	Fuda HII HTII III	Service 31-51 11/2-	n
Fageol 3400 114 Ton	Wauk B BX BUX		
Fageol, 3400, 1½ Ton. Fageol, 2½ Ton. Fageol, 4500, 5300, 3½-5 Ton. Federal SD 1 Ton. Federal UE TE 1½-2 Ton. Federal WE 3½ Ton. Forschler A, C, 1-1½ Ton. Forschler A, C, 1-1½ Ton. Forschler D, 2nd F 2-3 Ton.	Wauk C CU FU	Signal H-J 1½-2½ Signal M 3½ Ton.	Ton. Cont. C4 Cont. E4 E7 Cont. B2
Federal SD 1 Ton	Cont. J4	Signal R 5 Ton	Cont. B2
Federal UE TE 1½-2 Ton Federal WE 3½ Ton	Cont. C4	Southern 15 11/2 7	ron
Forschler D and E 2-3 Ton	Cont. N 8N	Standard 177 1 Ma	C 27 027
Fulton A-C 1 and 2 Ton	H-SP 7000	Standard 76 216 T	onCont. C2
Garford 25 B 1¼ Ton. Garford 70 H 2 Ton. Garford 77 D 3½ Ton. Gary GT-J 1½-2½ Ton. Gary KT 3½ Ton. Gersix K - M 1½-2 Ton. Gersix L 3 Ton. Giant 16 1½-2 Ton.	Buda R RU WU	Standard 5K 5 To	Cont. N 8N
Garford 77 D 31/2 Ton	Buda YU YTU XTU	Stewart 11 % Ton. Stewart 9 1% Ton.	Le Roi 2C
Gary KT 3½ Ton	Buda YU YTU XTU	Stewart 7X 21/2 T	onBuda HU HTU IU
Gersix K-M 1½-2 Ton Gersix L 3 Ton	Buda HU HTU IU Buda YU YTU XTU	Stewart 10 31/2 To	Buda HU HTU IU   Cont. C2   Cont. C2   Cont. C4   E7   Cont. E4   E7   Cont. E4   E7   Cont. C4   E7   Cont. C4   Cont. C4   Cont. C7   Cont. C8   Cont. C9   C9   C9   C9   C9   C9   C9   C9
Giant 16 1½-2 Ton	Cont. C4	Stewart 10X 312 Stoughton A-B 1-1	1/2 Ton
Gramm-Bernstein 15-65 1½ Ton. Gramm-Bernstein 20 2 Ton	Cont. N 8N	Success B 2½ To Superior D 1 Ton.	n
Hahn J-4 1 Ton	Cont. J4	Superior E 2 Ton.	
Hahn J-4 1 Ton	Cont. E4	Trabold 214 Ton.	4-914 Top
	Cont. E2	Tiffin PW 314 To	n
Hall 3½ Ton.	Cont. E4	Titan 3½-5 Ton.	and 6 TonCont. B2
Hall 2½ Ton. Hall 3½ Ton. Hall 5 Ton. Hall 5 Ton. Harvey WEA 1½ Ton. Harvey WFA 2½ Ton. Harvey WHA WKA 3½-5 Ton.	Buda OU QU	Tower G 314 Ton	Buda HU HTU IU   Cont. C4   Cont. E4 E7   Cont. E4 E7
Harvey WHA-WKA 316-5 Ton	Buda YU YTU XTU	Triangle AA % T	onH-SP
Hawkeye K 1½ Ton	Buda HU HTU III	Triangle B 21/2 To	Mauk. C CU FU
Hendrickson K 5 Ton	Wauk. EU	Lillimate B 21	TonBuda YU YTU XTU
Huffman C 1½ Ton	Buda R RU WU	Watson B % Ton.	Wauk, B BX BUY
Hurlburt 1½-2½ Ton	Buda HU HTU IU Buda YU YTU XTU	Walter S 5 Ton	Wauk, DU
Indiana 12 1¼ Ton	Wauk, B BX BUX	Winther Delivery	SpecialH-SP 7000
Italia 5 Ton	Buda YU YTU XTU	Wichita L-M-R 1	4-2-2½ Ton Wauk, B BX BIIX
*umbo 35-40 3½-4 Ton	Buda YU YTU XTU	Wolverine 1 and 1	## H-SP  Wauk, B BX BUX  Wauk, C CU FU  Wauk, C CU FU  Wauk, C CU FU  Buda YU YTU XTU  Fon. Buda HU HTU IU  Wauk, B BX BUX  Wauk, DU  Buda YU YTU XTU  Special H-SP 7000  -2 Ton. Cont. C4  4-2-2½ Ton. Wauk, B BX BUX  Wauk, B BX BUX  Cont. N 8N

#### RADAX OR RADIAL THRUST NEW DEPAR-TURE BALL BEARINGS.



Rada

In new style constructin, these bearings take

100 per cent	thrust.			
	Inside	Outside		
Bearing	Bore	Dia.	Width	List
No.	M/M	M/M	M/M	Price
0304	20	52	15	\$ 8.50
0404	20	72	19	12.50
0205	25	52	15	7.25
0305	25	62	17	10.00
0405	25	80	21	14.50
0206	30	62	16	9.50
0306	30	72	19	12.50
0406	30	90	23	17.50
0207	35	72	17	11.00
0307	35	80	21	14.50
0407	35	100	25	21.00
0208	40	80	18	13.00
0308	40	90	23	16.50
0408	40	110	27	24.00
0209	45	85	19	14.25
0309	45	100	25	20.00
0409	45	120	29	29.50
0210	50	90	20	15.50
0310	50	110	27	23.50
0410	50	130	31	36.00
0211	55	100	- 21	17.50
0311	55	120	29	28.50
0411	55	140	33	43.00
	60	110	22	21.50
0312	60	130	31	35.00
0412	60	150	35	51.00
0213	65	120	23	27.50
0313	65	140	33	42.50
0214	70	125	24	30.00
0314	70	150	35	50.00
0215	75	130	25	33.00
0315	75	160	37	62.50
0216	80	140	26	37.50
0217	85	150	28	43.00

# MAGNETO BEARINGS.

A type of ball bearing carrying a radial and thrust load. Used on automotive electrical equipment.

Bearings formerly known as Nos. 01, 621, 02 and 05 are now respectively represented by bearings Nos. 10, 13, 15 and 17 indicated in the following table.

Bearing	Inside Bore	Outside Dia.	Width	List
No.	M/M	M/M	M/M	Price
8	8	24	7	\$ 3.00
10	10	28	8	3.00
12	12	32	7	3.20
13	13	30	7	3,20
15	15	35	8	3.50
16	16	38	10	4.00
17	17	44	11	4.75
20	20	47	14	5.00

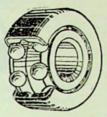
#### COMPARATIVE BALL BEARING DATA.

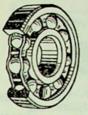
New Departure Single Row and Radax Ball Bearings are made in the same bore, diameter and width sizes as other standard makes, both foreign and domestic. New Departure may, therefore, be used for replacing other bearings. This table shows the name and number of bearings that correspond to the New Departure Single Row and Radax.

When you take a bearing out you will find it stamped with a number. Find this number in the table below and then by running along the line to the right of the page you can find what New Departure bearing should be used to replace the discarded bearing.

			Norma	C TE T	U.S.		New De-
S.R.B. 200	Gurney 200	Fafnir 200a	Ball	S.K.F. 1200	(Strom) 200	Bright 200	parture 1200
201	201	201a		1201	201	201	1201
202	202	202a		1202	202	202	1202
203	203	203a		1203	203	203	1203
204	204	204a	L 20	1204	204	204	1204
205	205	205a	L 25	1205	205	205	1205
206	206	206a	L 30	1206	206	206	1206
207	207	207a	L 35	1207 1208	207 208	207 208	1207 1208
208	208	208a 209a	L 40 L 45	1208	209	209	1209
210	210	210a	L 50	1210	210	210	1210
211	211	211a	L 55	1211	211	211	1211
212	212	212a	L 60	1212	212	212	1212
213	213	213a	L 65	1213	213	213	1213
214	214	214a	L 70	1214	214	214	1214
215	215	215a	L 75	1215	215	215	1215
216	216	216a	L 80	1216	216	216	1216
217	217	217a	L 85	1217	217 218	217 218	1217 1218
218 219	218 219	218a 219a	L 90 L 95	1218 1219	219	219	1219
220	220	220a	L100	1220	220	220	1220
221	221	221a	L105	1221	221	221	1221
222	222	222a	L110	1222	222	222	1222
300	300	300a	M 10	1300	300	300	1300
. 301	301	301a	M 12	1301	301	301	1301
302	302	302a	M 15	1302	302	302	1302
303	303	303a	M 17	1303	303	303	1303
304	304	304a	M 20	1304	304	304	1304
305	305	305a	M 25	1305	305 306	305 306	1305 1306
306 307	306 307	306a 307a	M 30 M 35	1306 1307	307	307	1307
308	308	308a	M 40	1308	308	308	1308
309	309	309a	M 45	1309	309	309	1309
310	310	310a	M 50	1310	310	310	1310
311	311	311a	M 55	1311	311	311	1311
312	312	312a	M 60	1312	312	312	1312
313	313	313a	M 65	1313	313	313	1313
314	314	314a	M 70	1314	314	314	1314
315	315	315a	M 75	1315	315	315	1315
316	316	316a 317a	M 80 M 85	1316 1317	316 317	316 317	1316
317 318	318	318a	M 90	1318	318	318	1318
319	319	319a	M 95	1319	319	319	1319
320	320	320a	M100	1320	320	320	1320
321	321	321a		1321	321	321	1321
322	322	322a		1322	322	322	1322
403	403	403a	S 17	403	403	403	1403
404	404	404a	S 20	404	404	404	1404
405 406	405 406	405a 406a	S 25 S 30	405 406	405 406	405	1405
407	407	407a	S 35	407		406	1407
408	408	408a	S 40	408	407	407 -	1408
409	409	409a	S 45	409	409	409	1409
410	410	410a	S 50	410	410	410	1410
411	411	411a	S 55	411	411	411	1411
412	412	412a	S 60	412	412	412	1412
413	413	413a	S 65	413	413	413	1413
414	414	414a	S 70	414	414	414	1414
415	415	415a	0.00	415	415	415	1415
416	416	416a	S 80	416	416	416	1416
417	417 418	417a 418a	S 90	417	417	417	1417
419	419	419a	5 30	419	418 419	418 419	1419
420	420	420a	S100	420	420	420	1420
603 P.		27 250		The state of	10000		2000

NEW DEPARTURE BALL BEARINGS.





Double Row

New Departure Ball Bearings are made in four distinctive types—the Single Row or strictly radial bearing, the Double Row or combined radial and thrust bearing, the Radax or perfected cup-and-cone bearing, and the Magneto type, developed for high-speed work in magnetos, starters and other devices of this kind. The New Departure line is therefore most complete, adapting the superior abilities of the ball type of bearing to any mechanism having rotating members.

# SINGLE ROW NEW DEPARTURE BALL BEARINGS.

# These are interchangeable with other annular ball bearings. Inside Outside

#### DOUBLE ROW NEW DEPARTURE BALL BEARINGS.

These are interchangeable with certain sizes of straight roller bearings that carry both radial and thrust loads.

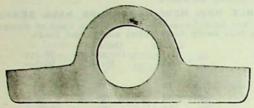
The Bully series	Inside	Outside			bearings that	carry both radi		loads.	
Bearing	Bore	Diameter	Width	List	Bearing	Inside	Outside	Width	List
No. 1200	M/M	M/M	M/M 9	Price	No.	Bore M/M	Diameter M/M	Inches	Price
		30		\$ 4.00		10	30	1/2	\$ 4.00
1300		35	11	5.00				34	5.00
1201		32	10	4.25		10	35		
1301	12	37	12	5.25		12	32	1/2	4.25
1202	15	35	11	4.50		12	37	3/4	5.25
1302	15	42	13	5.75	202	15	35	1/2	4.50
1203	17	40	12	5.00	302	15	42	34	5.75
1303	17	47	14	6.75	203	17	40	1/2	5.00
1403		62	17	11.00	303	17	47	7/8	6.75
1204		47	14	5.90	403	17	62	1 18	11.00
1304		52	15	8.50		20	47	3/4	5.90
1404		72		12.50		20	52	7/8	8.50
			19			20	72	13%	12,50
1000		52	15	7.25		25	52	34	7.25
1305		62	17	10.00					
1405		. 80	21	14.50		25	62	1	10.00
1206	30	62	16	9.50		25	80	1%	14.50
1306	30	72	19	12.50		30	62	34	9.50
1406	30	90	23	17.50	306	30	72	174	12.50
1207	35	72	17	11.00	406	30	90	178	17.50
1307	35	80	21	14.50	207	35	72	7/8	11.00
1407	35	100	25	21.00	307	35	80	13%	14.50
1208		80	18	13.00		35	100	1%	21.00
1308		90	23	16,50		40	80	1	13.00
1408						40	90	1 1/8	16.50
		110	. 27	24.00		40	110	1 18	24.00
1209		85	19	14.25					
1309		100	25	20.00		45	85	1	14.25
1409		120	29	29.50	And the second	45	100	1 1%	20.00
1210	50	90	20	15.50		45	120	21/8	29.50
1310	50	110	27	23.50	210	50	90	1	15.50
1410	50	130	31	36.00	310	50	110	1%	23.50
1211	55	100	21	17.50	410	50	130	2 %	36.00
1311	55	120	29	28.50	211	55	100	14	17.50
1411		140	33	43.00		55	120	113	28.50
1212		110	22	21.50	411		140	21/2	43.00
1312		130	31	35.00		60	110	13%	21.50
				51.00		60	130	21/8	35.00
1412		150	35				150	2%	51.00
1213		120	23	27.50		60			
1313		140	33	42.50		65	120	1%	27.50
1413		160	37	66.00		65	140	218	42,50
1214	70	125	24	30.00		65	160	211	.66.00
1314	70	150	35	50.00	214	70	125	118	30.00
1414	70	180	42	88.00	314	70	150	21/2	50.00
1215	75	130	25	33.00	414	70	180	316	88.00
1315	75	160	37	62.50	215	75	130	1 1/2	33.00
1415		190	45	105.00		75	160	211	62.50
1216		140	26	37.50		75	190	31/4	105.00
1316		170	39	72.00	216		140	1%	37.50
1416			48	120.00	316	80	170	211	72.00
		200		43.00	416		200	318	120.00
1217		150	28		217		150 180	134 238	43.00 86.50
1317		180	41	86.50 140.00	417	85	210	35%	140.00
1218	90	210 160	52 30	52.00	218		160	2	52.00
1318		190	43	105.00	318	90	190	236	105.00
1418	90	225	54	165.00		90	225	3 % 2 %	165.00
1219		170	32	60.00		95	170 200	37	60.00 120.00
1319		200	45	120.00 215.00		95	250	3 18	215.00
1419		250 180	55 34	78.00		100	180	23%	78.00
1320	100	215	47	135.00	320	100	215	236 314	135.00
1420	100	265	60	275.00		100	265	436	275.00
1221		190	36	90.00		105	190 225	2 1/4 3 1/4	90.00 150.00
1321		225 200	49 38	150.00 100.00		105	200	234	100.00
1322		240	50	180.00		110	240	35%	180.00
				rea D	C				

#### LAMINUM SHIMS.

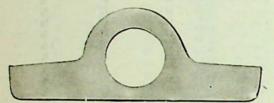


Dodge Connecting Rod.

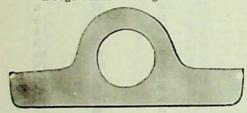
These shims are specially stamped to fit the bearings enumerated. Effect almost instantaneous adjustments. a-inch thick. Price, each.....\$0.05 s's-inch thick. Price, each. .07 to-inch thick. Price, each. .12 1/s-inch thick. (1/e-inch Steel Laminated.) Price, each. . .15



Dodge Main Bearing-Front.



Dodge Main Bearing-Center.



	Dodge Main Bearing-Rear.	
drinch thick.	Price, each\$0.06	,
	Price, each	
	Price, each	
	Price, each	



Ford Shim No. 1-Crank Shaft Rear Bearing.

Made of Laminum, the only metal made in layers-as solid as a single piece of metal, yet ready in an instant to be made thinner by .002 of an inch or as many times this as you desire.

In packages of 25 of one kind. #2-inch thick. Price, each. \$0.13

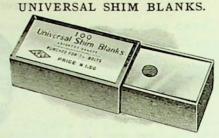


Ford Shim No. 2-Crank Shaft Front and Center Bearing. steinch thick. Price, each. \$0,09



Ford Shim No. 4-Connecting Rod. #2-inch thick. Price, each.....\$0.06 In ordering state thickness desired and whether .002 or .003 Laminations.

254 P. C.



Size  $2\frac{1}{2}$ "x $1\frac{1}{8}$ ", 100 in a slide box, assorted thicknesses as follows: 40 .002", 40 .003", 10 .005", 10 .010".

Assortments are put up with 100  $\frac{1}{3}$ 2" blanks for  $\frac{3}{8}$ " bolts, or 100  $\frac{1}{3}$ 2" blanks for  $\frac{1}{10}$ "x $\frac{1}{2}$ 2" bolts.  $\frac{1}{3}$ 2" holes fit the following: Maxwell connecting rod, Chevrolet 490 connecting rod, Ford connecting rod, Overland connecting rod, Continental 7-N connecting rod, Buick connecting rod, Oldsmobile 37 connecting rod.  $\frac{3}{2}$ 2" hole fits the following: Fordson Tractor connecting rod, Continental 7-W connecting rod, Ford crankshaft center bearing. Ford crankshaft front bearing. Ford crankshaft

ter bearing, Ford crankshaft front bearing, Ford crankshaft rear bearing, Dodge crankshaft rear bearing, Dodge crankshaft center and front bearing, Dodge connecting rod. Assortment. Price, each...... 601 \$0.85

#### SHIM STOCK.



A necessity in every garage. Will save hours of time otherwise spent looking for shims. Put up in four thicknesses, from .002 to .015, in 21/2-inch strips. Box contains 500 square inches of shim stock. 

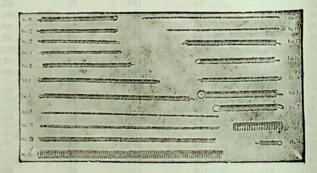
# SHIMS FOR FORD CARS.



Cut special and of the proper varied thickness to obtain the correct adjustment on the crank shaft bearing.

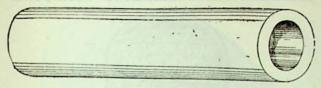
Each can contains 100 assorted shims of the following: Nos. 3037-3038-3039. Price, per pkg......807 \$1.50

#### AUTO-COIL SPRING ASSORTMENTS.



A complete assortment of Coil Springs, made of oiltempered wire. Set consists of twenty-five springs. No. 29 Assortment. Price...... 851 \$1.25

#### BRONZE BUSHINGS FOR BEARINGS.



Is a dense homogeneous bronze. It gives efficiency under all speeds and pressures, and for years has stood the most severe tests possible in railroad service.

0. D.	I.D.	Length	Aver.	O. D.	I. D. I.	ength.	Aver.
in	in	in '	weight,	in	in		weight
inches	inches.	inches.	lbs.	inches.	inches.		
* 3/4	Solid	12	13/4	17/8	11/8	12	63/4
1/8	Solid	12	21/2	11/8	11/4	12	53/4
*1	1/2	12	21/4	2	1	12	9
11/8	1/2	. 12	3	*2 *2 2	11/s	12	81/4
11/8	5/8	12	23/4	2	11/4	12	71/4
11/4	1/2	12	33/4	21/4	11/4	12	101/2
*11/4	5/8	12	31/2	*21/4	13/8	12	10
11/4	3/4	12	3	21/4	11/2	12	81/2
13/8	5/8	12	41/2	21/2	13/8	12	13
13/8 #13/8	3/4	12	4	21/2	11/2	12	12
#13/8	7/8	12	31/2	*21/2	15/8	12	11
*11/2	3/4	12	5	23/4	1%	12	15
11/2	7/8	12	41/2	23/4	13/4	12	131/2
11/2	1	12	4	23/4	17/8	12	12
*1%	7/8	12	51/2	3	17/8	12	161/4
15%	1	12	5	3 3	2	12	151/4
15/8	11/8	12	41/4	3	21/8	12	14
13/4	7/8	12	7	31/4	17/8	12	20
*13/4	1	12	61/4	31/4	21/8	12	18
13/4	11/8	12	53/4	31/4	23/8	12	15
11/8	1	12	71/2	RAM	-78		
	-		. / ~				

#### FIBRE.

#### Sheets.

Thickness.	Per Lb.	Thickness.	Per Lb.
te-inch	\$0.50	1/2-inch	\$0.53
1/s-inch	50	5/8-inch	
re-inch	51	3/4-inch	59
1/4-inch	51	%-inch	64
ra-inch	51	1 -inch	
%-inch	51		

#### Rods.

Diameter.	Per foot.	Diameter.	Per foot.
if-inch	\$0.15	re-inch	\$0.36
1/4-inch	16	%-inch	
re-inch	18		
3/8-inch			
re-inch	24	1 -inch	1.20
½-inch	30		

#### Tubes.

9	id-in.	1/s-in.		ig-in.	1/s-in.
	Wall.	Wall.		Wall.	Wall.
	Per	Per		Per	Per
I. D.	Foot.	Foot.	I. D.	Foot.	Foot.
1/4-inch	.\$0.10	\$0.18	%-inch		
ry-inch	10	.19	3/4-inch	16	.32
%-inch	.11	.21	7/s-inch	18	.36
re-inch	11	.22	1 -inch	20	.40
½-inch	.12	.24	11/s-inch	22	.44
re-inch	13	.26	11/4-inch		.48
		Mark	et Price.		

Average length of rod about five feet.

Will cut any size or length of rod above six inches without charge.

Average length of tube from two to three feet.

Will not cut tubing.

Can furnish larger sizes.

Sheets average dimension, 44x70 feet.

Will cut in halves and quarters without charge. Smaller sizes, four cents a pound cutting charges.

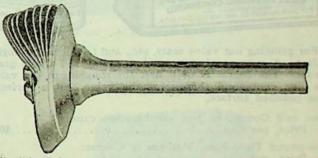
#### WHITNEY'S KEYS.



Woodruff Pattern.

This assortment consists of 100 Keys, in the sizes adapted to Automobile uses. Packed in neat wood case.

# FLEXIBLE SELF-SEATING LAMINATED VALVES.



Flexible Valves replace the poppet valves with which the automobile engine comes regularly equipped.

The merits of Flexedge rest in the fact that they do not

pit, warp, crack, leak nor need regrinding.

The head of the Flexedge is made of thin sheets of steel which permits of a single isolating movement over the entire seating face which scavenges solid matter—not only from the valve face, but from the companion seat.

Install them the same as you do any valve.

They have the indorsement of designing engineers and are being used for regular equipment.

Yes, we can supply them in oversize stems at an extra charge of 15 per cent for 1-in. oversize, 21 per cent for 12-in. oversize.

We will quote you on valves other than the ones listed.

#### Models.

Fords	1	Each.
Fords		\$0.75
Fords, de oversize		
Chrevolet		
Buick D44 and D45		1.50
Buick D35		1.25
Buick D-55		2.00
Buick E45 inlet		2.00
Buick E45 exhaust		1.75
Oakland Six		1.25
Oldsmobile 37 and 45		
Dodge		
Overland Country Club		
Overland 83-B		2.00

252 P. C.

#### CLOVER VALVE GRINDING COMPOUND.





A fast-cutting compound, ready for use.

Small can is a double-cover container, with two grades, coarse and fine. One-pound cans put up in two grades, B Fine and D Coarse.

Duplex, 2-oz. Cans.	Price, each	\$0.30 3.60
Duplex, 4-oz. Can.	Price, each	.50 6.00
1-pound Can.	Price, each	1.50 18.00

# CARBORUNDUM VALVE GRINDING COMPOUND.





For grinding out valve seats, etc., and for all motor engine valves. A mixture of carborundum grains and a high grade grease. The coarse is used first for roughing-in the valve, the fine compound then gives the valve seat a perfectly true polished surface.

Fine and Coarse, in 4-oz. combination cans: Price, per Can\$0.50
One-pound Tins, Fine, Medium or Coarse: Price, per Can

253 P. C.

#### ZIP VALVE GRINDING COMPOUND.



This grinding compound is mixed with water and therefore aids fast and even cutting. An inexperienced man can do the grinding in less time without cutting rings. Fine, medium and coarse grades. Medium is the most suitable for auto work. 8-oz. cans, 6 in carton, 4-oz. cans, 12 in carton.

8-oz. Cans. Price, each	553	\$0.75
In ½ doz. lots or more. Price, each	506	.75
4-oz. Cans, Medium only. Each		

#### HI-LIGHT BEARING BLUE.



## IOHNSON'S VALVE GRINDING COMPOUND.



Will remove pits and foreign substance from valves giving a velvet seat. Is a uniform mixture and is all ready for use as it comes in the can. 4 oz. cans, 144 to case; 1-lb cans, 48 to case.

4-oz. Du	plex Cans, F	ine or Coarse.	Price, each \$0.50
1-lb. Ca	ns, Fine or	Coarse. Price	e, each 1.25
		336 P. C.	

#### TIME SAVER BEARING GRINDING COMPOUND.



For grinding babbitt, bronze, brass and all types of soft

metal bearings.

Guaranteed to be free from abrasives or chemicals injurious to shaft, motor or any machinery. Coarse grade especially adapted for large bearings and low grade babbitt also for roughing in. Fine grade especially adapted for automobile work, and all grades of babbitt, bronze and brass bearings, requiring a perfect fit. Packed in 6 and 12 can display paper cartons.

	Price, each
172-02. Can, Fine of Coarse.	Frice, each
251	D C

#### CYL-LAP LAPPING COMPOUND.



Guaranteed not to contain any abrasives, such as emery, carborundum or ground glass.

Coarse Grade is especially adapted for hand lapping, where old piston or lapping tool is used and a large clearance exists.

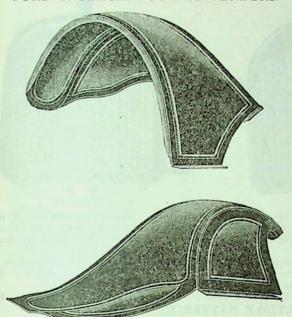
Fine Grade is especially adapted for power lapping, where an expanding piston or lap is used or for any form of hand

Finish Compound—For finishing pistons, grinding valves and all kinds of lapping, either by hand or power. Packed 6 cans in display paper carton.

8-oz.	can,	fine	or	coarse.	Price,	ea	ch	 	 	 	 \$2.50	
4-oz.	can,	fine	or	coarse.	Price,	ea	ch	 	 	 	 1.50	
4-oz.	can	finish	1 C	ompound	. Pric	e, (	each	 		 	 1,50	

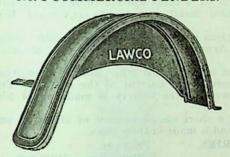
258 P. C.

#### FORD INTERCHANGEABLE FENDERS.



For 1917 to 1922 Passenger Cars. Earlier Models from Factory.

# No. 1 COMMERCIAL FENDERS.



When a Ford car is converted into a commercial car, a pair of these fenders is necessary, as the fenders which are furnished with the Ford chassis will not allow a commercial body to be put on without interfering with the fenders. Made of heavy gauge steel, and finished with two coats of black enamel, baked on. They match up with the front fenders of the Ford car.

#### No. 1 Crown Commercial Fenders:

Packed 1 pair to crate, weight 35 lbs. Per pair. 3257 \$5.50 Packed 5 pair to crate, weight 125 lbs. Per pair. 3102 5.50

#### No. 5 COMMERCIAL FENDERS.

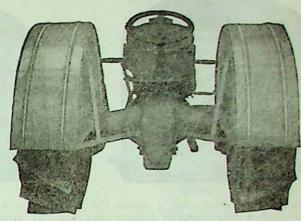
Designed especially for Ford one-ton truck, equipped with 32x4½ pneumatic tires. Made of heavy gauge steel, finished with two coats of black enamel baked on.

Two extra heavy wrought iron brackets, bolts and washers, also black enamel, furnished with each fender.

# No. 5 Crown Commercial Fenders:

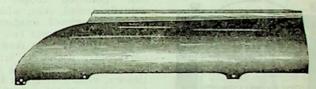
Packed 1 pair to crate, weight 40 lbs. Per pair. 3602 \$6.00 Packed 5 pair to crate, weight 140 lbs. Per pair. 3506 6.00

# FENDERS FOR FORDSON TRACTORS.



Strong and durable. Made of No. 20 O. P. C. R. steel, reinforced with tee iron, heavy bar iron braces; painted gray enamel. Braces do not interfere with the driver getting in or out. Easy to install.

#### FORD RUNNING BOARD SHIELDS.



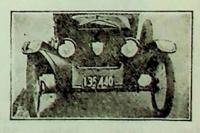
Extra for crating pairs.

# FORD ENGINE HOODS.



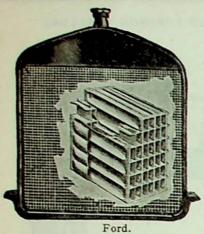
For all 1917 and later Ford Cars. Price, each ... 2346 \$3.50

# FRONT APRONS FOR FORD CARS.



Prevents mud from clogging radiator. By reason of its shape induces a greater volume of air to pass through radiator and reduces risk of over-heating. Keeps lamps clean, prevents vibration of mud guards.

Made of heavy steel reinforced at corners and finished in two coats baked enamel, complete with bolts, nuts and lock washers; also instructions.







This illustration clearly shows the construction and qualities of the B. & W. Radiators. The large volume of water carried is another valuable feature that increases efficiency, reduces evaporation and refilling of radiator. Rust and corrosion proof. Both core and connections are constructed throughout of a special alloy of copper and zinc. The shells are pressed steel, highly finished and heavily enameled. Packed 1 in box.

Ford—All Models, 1914 to 1920. Weight 41 pounds.

Chevrolet Model 490, Pump Type. Weight 45 pounds.





A unit battery in an attractive red, moisture-proof case. Soldered copper strips connect the individually tested cells, which are entirely surrounded by a waterproof insulating compound. It is only necessary to connect two wires to the binding posts. The battery is then ready to operate. Hot Shot is particularly useful for ignition where the variety of sizes makes it adaptable for motors of all sorts—stationary, vehicle or motor boat. It is very satisfactory for carriage lighting outfits.

COLUMBIA MULTIPLE BATTERY. Made from specially selected cells arranged and connected to give

various voltages and capacities. The cells are connected by means of heavy copper ribbon soldered to the terminals. Every cell is insulated from the case and from the other cells in such a way as to make waterproof and practically damage proof unit battery. Enclosed in a hermetically sealed, handsomely enameled metal case, with convenient handles for carrying.

Below we give a table showing sizes, weights, and voltages of the various batteries. The type number indicates the number of cells in the battery and the voltage; and if there is a fourth figure, it indicates whether the cells are arranged

in one row or two.

To illustrate: The first figure shows the number of cells connected in multiple. In other words, by multiplying the amperage of one cell by the first figure you will get approximately the short circuit current of the battery. The second figure shows the number of cells connected in series. The third figure shows that the battery is made up of 6-inch cells. The fourth shows the number of rows of cells.

A 3463 battery is, therefore, made up of three cells in multiple, giving a short circuit current of about 75 amperes; 4

cells in series, giving a voltage of 6; the battery is made up of 6-inch cells, and is made in three rows.

			COLU	MBIA HO	T SHOT BAT' Weight of	TERIES.	Price per Battery, Box	Price per	
Туре	Voltage	Length, Inches	Width, Inches	Height, Inches	Standard Pkg. Pounds	Quantity in Standard Pkg.	or Barrel Lots	Battery, Broken Lots	Price per Battery
1461	6	10%	23/4	71/2	S Box 136 Bbl. 275	12 } 24 }	1692	1796	\$2.20
1462	6	5%	5%	71/2	Box 134 Bbl. 250	12 } 21 }	1695	1791	2.20
1561	71/2	131/4	23/4	71/2	Box 167 Bbl. 225	12 ) 15 }	2026	2128	2.60
1562	71/2	8	5	71/2	Box 166 Bbl. 260	12 } 18 }	2029	2123	2.60
1662	9	8	5¾s	71/2	Box 136 Bbl. 230	8 }	2392	2498	3.10
			COLUMBIA	MILTIP	LE BATTERI	ES (Metal Cas	(a		

	COLUMBIA MODIFILE BATTERIES (Metal Case).								
					Weight of		Dealers' Price	Dealers' Price	
		Length,	Width,	Height Over	Standard Pkg.	Quantity in	per Battery	per Battery	Price per
Type	Voltage	Inches	Inches	All, Inches	Pounds.	Standard Pkg.	Barrel Lots	Broken Lots	Battery
326	3	81/8	51/2	83/4	310	17	3296	3441	\$4 40
146	6	11	3	83/4	314	25	2351	2457	3.10
246	6	11	51/2	83/4	298	12	3941	4146	5.15
346	6	11	81/8	83/4	265	7	5443	5692	7.10
156	71/2	133/4	3	83/4	300	20	2826	2977	3.70
256	71/2	13¾	51/2	83/4	280	9	4649	4849	6.10
356	71/2	133/4	81/8	83/4	280	6	6662	6963	8.80
166	9	81/8	51/2	83/4	310	17	3197	3342	4.20
266	9	11	81/8	83/4	265	7	5143	5608	7.10

Round Carton.

# AMERICAN DRY CELLS.

These are high-grade dry cells. They are made under the supervision of experts. Materials used and the workmanship are of high quality. All cells are carefully inspected, and tested several times before leaving the factory, and are approved for shipment only after they meet with rigid specifications.

The large capacity of American Dry Cells is due to the excellent formula with its well-balanced proportion of ingredients, which gives them a uniform discharge of energy when in service, with minimum deterioration in capacity while they are not in use.

American Ignition Dry Cells are made especially for supplying energy for ignition systems with gas and gasoline engines and heavy service, such as operating telephone changers, lighting miniature lamps, railway telephone bells, electric lanterns, mine signals, etc. These Cells are furnished in both round and square cartons. Specify kind preferred when ordering.



Square Carton.

#### PRICES.

#### No. 6 American Ignition Dry Cells.

	Pric	ce, each
In lots of less than 12	401	\$0.60
In lots of 12 to 49		.55
In lots of 50, in wire bound boxes. Per 100	1543	.50
Barrel lots, standard package (125) and over, F. O. B. St. Louis. Per 100		.50
Barrel lots, standard package (125) and over, F. O. B. Factory. Per 100	0000	.50

#### COLUMBIA IGNITOR CELLS.



No. 6. S	Size, 2½x6 inches.	
Quantity:	1 to 11. Price, each	\$ 0.60
	12 to 49. Price, each 343	.55
	50, in wire bound boxes.	
	Price per 10030544	50.00
For Barrel	Shipment from Factory, per 10029008	50.00
For Barrel	Shipment from St. Louis, per 10030602	50.00

Buyer pays all freight.	
COLUMBIA REGULAR CELLS.	
No. 6. Size, 21/2x6 inches.	
Quantity: 1 to 11. Price, each 422	\$ 0.60
12 to 49. Price, each 366	.55
50, in wire bound boxes.	****
Price per 10031214	50.00
For Barrel Shipment from Factory, per 10029002	50.00
For Barrel Shipment from St. Louis, per 10030869	50.00
Buyer pays all freight.	

#### COLUMBIA RED LABEL SPECIAL DRY CELLS.



#### For Open Circuit and Intermittent Work.

No. 6. Size, 21/2x6 inches. Flat Top.

Quantity:	1 to 11. Price, each 103	\$ 0.60
	12 to 49. Price, each 346	.55
SUP	50, in wire bound boxes. Price per 10030541	50.00
For Barrel	Shipment from Factory, per 10029003	50.00
For Barrel	Shipment from St. Louis, per 10030699	50.00

Buyer pays all freight.

RED SEAL DRY BATTERIES.





#### THE GUARANTEED CELL.

If any of RED SEAL DRY BATTERIES do not give satisfactory service for IGNITION OR OTHER WORK, we will credit account, refund money or replace with new cells.

The dealer is authorized to make good this guarantee.

Size A. 21/2 inches x 6 inches. Round or Square Carton:

Less than 12	\$0.60
Standard case (50)	.55
125 (1 Barrel)	50.00
125 (1 Barrel)	50.00

F. O. B. St. Louis, Mo.

#### SQUARE C BATTERY CONNECTORS.



Regular length, 4 inches.

Stranded tinned copper wire conductor, thoroughly insulated. Corrugated terminal, which acts as washers, to prevent loosening.

Price,	eac	h	1/27	\$0.021/
Price,	per	dozen	162	.25
Price.	per	100	906	2.00

#### PERFECTION BATTERY CONNECTORS.

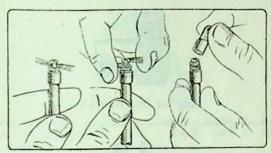


Can be used with or without nut. Perfect electrical contact. Soldered ends. A connector that positively will hold. Clips made of spring steel.

P	rice,	eac	n		 	 	 	31/24	\$0.08
F	rice,	per	doz	en	 	 	 	357	.72
F	Price,	per	100.		 	 	 	.2657	5.60

# SEE

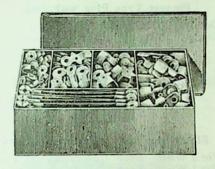
# TOOL SECTION FOR STORAGE BATTERIES BATTERY SUPPLIES AND TOOLS



Takes a bull dog grip on the wire and cannot be pulled loose. Neither will they vibrate loose. Packed 50 of one size to the box.

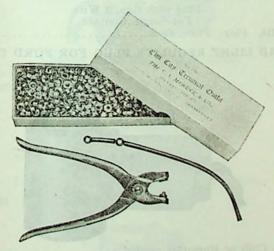
No. 5, for	5	m/m,	about 17".	Primary.	List,	each\$	0.10
No. 7, for	7	m/m,	about 32"	Secondary.	List,	each	.10
No. 8, for	8	m/m.	about is"	Secondary,	List,	each	.10
No. 9, for	9	m/m.	about 11"	Secondary.	List.	each	.10
				Il boxes 407			

#### COPPER TERMINAL ASSORTMENTS.



No. 3 Assortment consists of 25 each No. 0, No. 1. No. 14, No. 1½, No. 2, No. 3, No. 3½. No. 4, No. 5, No. 6, No. 7, No. 8, No. 9 Terminals and 25 each Plain and Perfection Connectors.

#### ELM CITY TERMINAL OUTFITS.



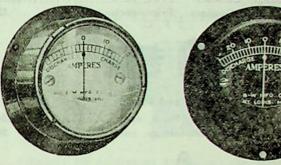
Just what every garage, storage battery and wiring man is looking for. Operation simple, remove insulation from wire, split the ignition cable, twist wire around the brasslet and operate the punch. Outfit consists of one thousand brasslets and an 8" nickel-plated punch.

meker placed panem	
Elm City Outfit. Price, each1804	\$3.00
Brasslets only. Price per 1 000	2.00

# COPPER TERMINALS.

Q	8				
18		-	2		0.00
	No. 1. Primary.	No. Secon		No Secon	
No. 0. Price, per No. 1. Price, per No. 2. Price, per No. 3. Price, per	dozen67 dozen101	\$0.10 .10 .20 .30	Per Per	100256 100406 100501 100706	.60 1.20

#### B-W DIRECT CURRENT AMMETERS.



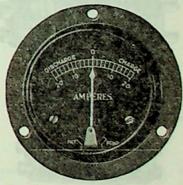
Surface Type.

Flush Type.

Accurate, and holds its accuracy and finish.
In ordering, state which is wanted, Surface or Flush Type,
Nickel Finish or Black Rubberoid Finish. Unless otherwise
ordered, Black Rubberoid will be sent.

10-0-10.	Price,	each					L								 		 . \$	2.50	
15-0-15.	Price,	each										 						2.50	1
20-0-20.	Price.	each																2.50	
30-0-30.	Price.	each				 												2.50	
				10	21	P		(											

# B.W AMMETERS FOR FORD CARS.



Mounted in a black rubberoid case to fit exactly in space provided on regular Ford panel. The scale has zero center reading, 20 amperes both ways, discharge and charge. It is black with white characters and each instrument is accurately calibrated by a standard.

Price,	each			03 \$1.50
Price,	each,	dozen	lots8	06 1.50

#### WATERPROOF INSULATED STAPLES.



16	wide,	1/2"	long.	Per	100326	\$0.60
16	wide,	3/4"	long.	Per	100329	.60
1/4"	wide,	5/8"	long.	Per	100352	.65
1/4"	wide,	34"	long.	Per	100351	.65

#### HARD RUBBER EDISWAN SOCKETS.



Combination	Socket	and	Cap	Plugs.	
-------------	--------	-----	-----	--------	--

No. 14.	Single Contact.	Price,	each\$0.50
No. 14.	Double Contact.	Price,	each



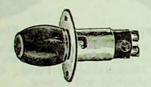
# Plugs Only.

No. 115.	Single Contact.	Price,	each\$0.1	12
No. 115.		Price,	each	12



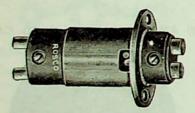
## Caps and Plugs.

No. 114.	Single Contact.	Price, each104	\$0.20
No. 114.	Double Contact.	Price, each106	.20



#### Connectors with Caps.

No. 2-C.	Single Contact.	Price,	each\$0.48
			each



#### For Wood Dashes.

No. 2-E.	Single Contact.	Price,	each\$0.40
No. 2-E.	Double Contact.	Price,	each



#### Wire Connectors with Set Screws.

No. 4E.	Single Contact.	Price,	each\$0.34
No. 4-E.	Double Contact	Price.	each



# Head Lamp Socket for Ford Cars.

No. 11.	Price,	each\$0.35
		and D. C.

Screws for Above Sockets.

#### HARD RUBBER SOCKETS.



#### Plug for Overland Cars.

No.	1-B.	2	Wires.	Each	\$0.30
No.	1-B.	1	Wire.	Each	30



#### Plunger Type Plug with Cap.

No. 214.	Double.	Price, each\$0.30	)
		Price, each	



# Elbow Plug and Cap. Size, 5/8-Inch.

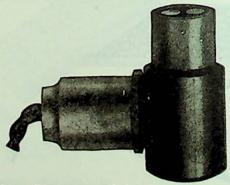
No. 1-E.	For 2 Wires.	Each	
No. 1-E.	For 1 Wire.	Each	34



Plug with Cap, 2 Wire. For Single Contact.

No. 314. Plug. Price, each.....\$0.30

HEAD LIGHT REGULITE PLUG FOR FORD CARS.



No Coils or Rheostats needed.

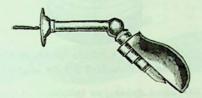
Put this plug in the right-hand lamp, nearest the generator, in running fast over smooth, or slow over rough roads, the lights burn with steady brightness.

Either lamp can burn without affecting the other.

No. 313. Plug, made from Hard Rubber:

Price, each..... 334 P. C. GAUGE LAMPS.



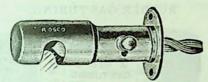




Cowl Gauge Lamp, wired complete, with Ediswan socket less bulb.

No. 152. Price, each.....\$0.90

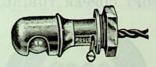
DASH LAMPS.



Switch Type Dash Lamps.



Chubby Type Switch Dash Lamp.



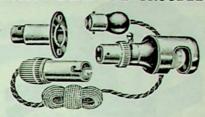
Lock Nut Type Dash Lamps With Switch.

No. 359 Price, each ......\$1.00



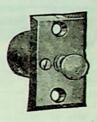
Short Type.

 COMBINATION DASH AND TROUBLE LAMPS.



Supplied complete with Dash Lamp and 10 feet of wire made up with Plug, socket and flange connector,

#### CONNECTICUT LIGHTING SWITCHES.



Primarily for lighting as pulling out the button closes an individual circuit and pushing it in opens the circuit.

- 1 Gang size, 11/2" high by 1" wide. Standard pkg. (24).
- 2 Gang size, 2"x2fg". Standard pkg. (24).
- 3 Gang size, 111 "x213". Standard pkg. (24).

No. 77-Y.	Black, 1 Gang.	Price, each244	\$0.40
No. 19-Y.	Black, 2 Gang.	Price, each483	.80
No. 10-Y.	Black, 3 Gang.	Price, each736	1.20

#### HANDY SWITCHES.



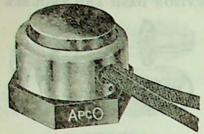
Handy Round Case Two Point Switch, with removable

#### FLAT PUSH BUTTONS.



331 P. C.

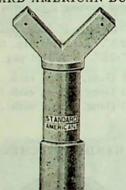
#### HORN BUTTONS FOR STEERING WHEELS.



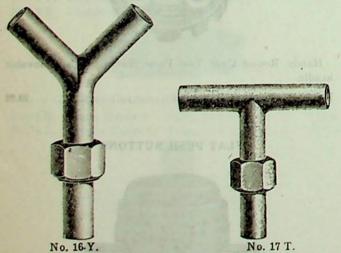
# HORN BUTTONS FOR FORD CARS.



#### STANDARD AMERICAN BURNERS.



# BRAZED CONNECTIONS WITH UNIONS.



#### CALCIUM CARBIDE.



For Use in Carbide Generator. Gives a Powerful White Light.

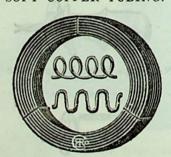
Packed in 100-pound drum	s, as follows:	
Packed in 100-pound drum	is, as follows:	
Size, 3½x2 inches.	Price, per Drum6756	\$7.00
Size 2 x ½ inches.	Price, per Drum6751	7.00
Size 11/4 x 3/8 inches.		7.00
Size 1/4x1/12 inches.	Price, per Drum6751	7.00
Miners' Size.	Price, per Drum6756	7.00
Auto Size.	Price, per Drum6752	7.00
	per Case (6)	\$7.00 7.00
	s follows: Price, per Case (24)5009 Price, per Case (24)5007	\$6.50 6.50

#### RUBBER GAS TUBING.



Extra Heavy Tubing, about twice as heavy as the ordinary gas tubing. Inside diameter 1%-inch, thickness of wall 1%-inch, outside diameter 1%-inch. Weight, 8½ pounds per 100 feet. Price, per foot. 92 \$0.15 In 100 foot lengths, per foot. 76 .12

#### SOFT COPPER TUBING.



For (	Gas, Gaso	line, o	or Oil.	
In le	ngths of a	about	12 feet.	
4-inch	outside.	Per	foot 82	\$0.25
'e-inch	outside.	Per	foot	.30
's-inch	outside.	Per	foot	.35

#### AUTOMOBILE LAMP CORD.



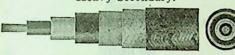
For Automobile Wiring Purpose.

#### BREWERY CORD.



Brewery Cord consists of two conductors, stranded, rubber insulated, braided, and two twisted together.

#### AUTOMOBILE IGNITION CABLE. Heavy Secondary.



B-12. No. 14 American Wire Gauge (B. & S.). Conductor, 19 wires tinned. Insulated with three layers alternate black and white rubber, two layers varnished cambric, one soft cotton braid and one hard glazed cotton braid over all. Outside diameter approximately ½ inch.

Price, per foot.....51/26 \$0.13 Per 100 feet....5006 \$12.00

#### Magneto Secondary.



0

B-9. No. 14 American Wire Gauge (B. & S.). Conductor, 19 wires tinned. Insulated with two layers white and black rubber, two layers, varnished cambric, one soft cotton braid and one hard glazed cotton braid over all. Outside diameter, approximately % inch.

Price, per foot.....41/42 \$0.08 Per 100 feet....3752 \$7.80

## Plain Rubber Covered Secondary Magneto.



R.R.-7. No. 14 American Wire Gauge (B. & S.). Conductor, 19 wires tinned. Insulated with three layers of rubber, black, white and black Outside diameter, approximately size inch.

Price, per foot......32 \$0.041/2 Per 100 feet....2508 \$4.50

#### Special Single Lighting.

No. 16 American Wire Gauge (B. & S.). Double braided; inside soft cotton, outside braid hard glazed.

R.S.-5. 3 inch diameter.

Price, per foot......23 \$0.03 Per 100 feet....1505 \$2.70

## GALVANIZED ARMORED LIGHTING CABLE.

#### REINFORCED PORTABLE CABLE.



Lamp Cord, covered with a rubber jacket and one braid cotton having a weather-proof finish. Used in garages for lighting purposes, where light is to be moved about.

No. 18. Commercial Grade. Per foot......31/45 \$0.07 No. 18. Commercial Grade, 250 ft. or over. Per ft. 36 .07

### Duplex Primary and Lighting Cables.



Conductors, size 16 American Wire Gauge (B. & S.). 26 wires bunched, untinned, cotton wound. Insulated with one layer of black rubber and one distinctively colored braid. Two such conductors laid parallel and covered over all with one hard glazed cotton braid.

R.S.-2-Way. No. 16 American Ware Gauge (B. & S.) Outside diameter .190x.350.

Price, per foot....33/16 \$0.06 Per 100 feet...3301 \$5.60





R.S.-3-Way. No. 16 American Wire Gauge (B. & S.). Outside diameter .370.

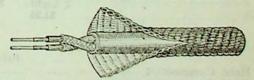
Price, per foot.....62 \$0.101/2 Per 100 feet....5508 \$10.50

## "V. C." HIGH TENSION CABLE.

For those who prefer varnished cambric insulation in addition to rubber. Consists of single conductor No. 14 B. & S. Gauge composed of 41 strands No. 30 B. & S. tinned copper wires insulated with rubber to \$\frac{1}{44}\$-inch diameter, wrapped with two layers of varnished cambric braided over all with Safety Standard green and red braid, which is treated with a flexible varnish. Outside diameter \$\frac{3}{44}\$ inch.

No. 14. Price, per 100 ft......\$9.15

#### DURACORD PORTABLE CABLE.



For Hard Service.

Duracord is a portable cord with a special cover. This cover is woven from heavy cotton yarn as contrasted with a light braid. It is made like a piece of fire hose. Laboratory tests and actual use have proved that Duracord will outlast ordinary cords four, five and six times over.

Duracord has none of the disadvantages of steel armored cable, which breaks open easily when kinked or crushed, forcing the metal through to the copper conductor with the liability of electrical shock to the operator.

Wherever cable is subjected to hard usage or abuse of any kind, Duracord should be used. It is a positive economy on account of its long life. It saves the labor cost of constant refitting and repairing. It is safer for the workmen to handle.

156 P. C.

# RUBBER-COVERED CONDUCTOR WIRE.



Single Braid.	
Size, B & S Gauge	14
Diameter Copper, mils	0640
Capacity Circular, mils	
	3-64
	14-64
Price, per 100 feet	\$5.00
Price, per 100. In 500 ft. lots	4.00

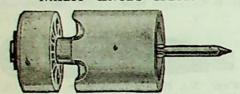
# LAMP CORD.

11	o. 10 New Cord I wisted.	
Less than 250 feet.	Per 100 feet2501	\$7.30
250 to 1,000 feet.	Per 100 feet2006	5.50

#### RELIANCE WEATHERPROOF WIRE. Solid Copper Wire. Triple Braid Black Finish.

B. & L. Gauge	Dia. Inches,		Std. Pkgs., Approx. Amount	Pric Per	0.00
No. 8.	128.5	75	5,000 ft.	253	\$0.40
No. 10.	101.9	53	35 to 50 lb. coils	251/26	.41
No. 12.	80.8	35	25 to 40 lb. coils	263/49	.43
No. 14.	64.1	25	25 to 40 lb. coils	292	.46
	100 t	o 200 lb	s 13 per lb. less.		

# "NAILIT" KNOBS-SPLIT.



Size	· W	ire	Quantity In Barrels	per Barrel	Pri Per		Pric Per	
12 12	to	14	4500 3250	532 500	13101 13105	\$60.00* 64.00*	1606 1608	\$6.00 6.00

# BENJAMIN CLUSTERS.



	DATE AND THE ARRANGE OF THE	No. 92.	No. 93
		2 Light.	3 Light
rice, each		\$1.25	\$1.75
	103 P. C.		

# SOCKET BUSHINGS.

									each.
1/s-inch. 3/s-inch.	Hard Hard	Composition Composition	 	 	 				\$0.06 .10
		607	 . (:						

#### CUTOUT BOXES-STEEL. Surface Type, With Hinged Covers.

Surface 2 Jpc, .	A TANK THE PROPERTY OF THE PARTY OF THE PART		
6x 8x4 inches. Each\$1.10 6x10x4 inches. Each 1.50 8x 8x4 inches. Each 1.50 8x10x4 inches. Each 1.90	10x12x4 10x15x4 10x18x4 12x12x4	inches. inches. inches. inches.	Each. \$2.00 Each. 2.20 Each. 2.20 Each. 2.40 Each. 2.60

#### PORCELAIN TUBES.



fe-inch hole; fe-inch outside	diame	ter.	
	3 in. \$1.80	4 in. \$2.70	6 in \$4.00

# RUBBER TAPE.

Price, per pou	ind, 1/2 pound	rolls	606	\$1.30
----------------	----------------	-------	-----	--------

#### FLEXIBLE CONDUIT.



#### Duraduct. Non-Metallic.

	Per 100 feet\$5.00	
32-inch.	Price, per 100 feet	

#### FLEXIBLE STEEL ARMORED-CONDUCTORS.



# Twin Conductors. Type BX.

			Weight,	Price,
			per 100 ft.	per 100 ft.
No. 14.	BX	Solid	42	 . \$13.00
No. 12.	BX	Solid		 
No. 10.	BX	Solid	54	 . 22.00
		16	2 P C	

# METALLIC FLEXIBLE CONDUIT.

#### Single Strip Type.

Diameter	per 100 ft.		per 100 ft.
1/2-inch	 54 .		\$20.00
3/4-inch			00.00
			46.00
		Construction in the second	

## Double Strip Type.

Inside	Weight,	Price,
1/2-inch	 63	 \$20.00
		 26.00
		 46.00
	506 P C	

#### PORCELAIN CLEATS.

Unglazed Porcelain; Grooved for Standard Size Rubber-Covered Wires; Diameter of Groove, 3-inch.

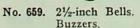


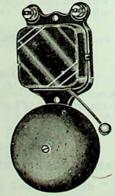
No. 2. For 2 Wires; length, 31/4 inches; width, 11/2-inch; height, 11/2-inc; weight per 1000 about 300 pounds. Price, per 1000 ... No. 3. For 3 Wires; length, 3½ in.; width, ½ in.; height, 1½-in.; weight per 1000 about 375 pounds. Price, per

1000 ..... Approximately 2000 in a barrel. 603 P. C.

#### IRON BOX BELLS AND BUZZERS.







Price,	each \$1.30	)
	each 1.40	)
203 P.	C	

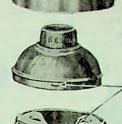
Price

#### G. E. SOCKETS.











G. E. 302.

Price Std. Pkg. Each %" Cap Key Socket......
Pendant Key Socket.....
Pendant Keyless Socket..... 500 \$0.66 GE-300. .66 GE-312. .60 GE-313. 500 GE-301. ½" Cap Keyless Socket. 500 GE-302. ½" Cap Pull Chain Socket. 250 GE-314. Pendant Pull Chain Socket. 250 .60 1.20 504 P. C.

# WEATHERPROOF SOCKETS.



	GE-60666.	Price
	Std. Pkg.	Each
GE 040	Porcelain	\$0.50
CE cocce	Composition 250	.48
GE-43310.	Moulded Material 250	.44
02 10010.	501 P. C.	

# G. E. PORCELAIN SOCKETS.



GE-099. Std. Pkg.	Price Each
Key	\$0.66

# 306 P. C. G. E. PORCELAIN RECEPTACLES. For Concealed Work.



	<b>O</b>		Price
	GE-864. S	td. Pkg.	Each
GE-864.	Pull	100	\$1.40
	Key		.70
GE-601.	Keyless	100	.64
	Receptacles For Cleat Wor	k.	
GE-9402.	Keyless	250	.40

250 P. C

#### THREADED CATCH SOCKETS.

This threaded ring guarantees the safety of the heaviest reflector.

Lugs on the cap fitting into notches in the shell prevent turning of the cap or shell.

The threaded ring forms a positive connection between the shell and cap, direct strain cannot pull them apart, vibration cannot shake them apart.

Many industrial conditions suggest the use of G-E threaded-catch sockets.

333	Std.	. Pkg.	Each
GE-895.	Key 1/8" Cap Brass	500	\$0.66
GE-992	Pendant Cap Key Brass	500	.66
	Keyless 1/8" Cap Brass	500	.60
		500	.60
GE-975	Pull 1/8" Cap	250	1.20
D-010.	452 P. C.		

# G. E. PENDANT SWITCHES.



-inch, per 100.....

1¼-inch, per 100..... 1½-inch, per 100.....



15.00

20.00

6.00

10.00

15.00

	02 000.	Price
	Std. Pkg.	Each
E-683.	Porcelain	\$1.00
E-558.	Brass	1.00
	1-8 D C	

	450 P. C.		
PICII	IRON COND	TIT	
RIGII			Black.
Size.	100 ft.		per 100 ft.
½-inch			
3/4-inch			
1 -inch	7.00		
11/4-inch			
1½-inch			
2 -inch			
2 -IIICII			10.00
	Elbows.		-
	Weight per		Black,
Size.	100 ft.		per 100 ft.
½-inch			
3/4-inch			
1 -inch			
11/4-inch			
1½-inch			
1/2-111011	121		220.00
	Couplings.		
½-inch			\$ 18.00
3/4-inch			
1 -inch			
11/4-inch			
1½-inch			
2 -inch	and the same of th		
2 -men			00.00
CONDIUM	CHINGS AND	OCKNI	rc .
CONDUIT BU	SHINGS AND		
		Bushings.	
1/2-inch, per 100		\$ 6.00	\$ 2.50
3/4-inch. per 100		8 00	3.50

606 P. C.



GGG

#### G. E. ATTACHING PLUGS-S. GE-624.

Price Std. Pkg. Each \$0.50 GE-624. Moulded Material... 100







	GE-39237.		rice
F-39239	Fuseless	Rosette, Concealed	\$0.30 .30

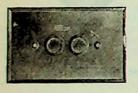
# G. E. ENTRANCE SWITCHES AND PLUG CUTOUTS.



125 Volts-30 Amp.

100	GE-42869.	
A STATE OF THE PARTY OF THE PAR	Std. Pkg.	Price Each
GE-42869.	Entrance Switch, 2 Wire 100	\$1.00
GE-35367.	Entrance Switch, 2 Wire 100	1.10
GE-35368.	Entrance Switch, 3 Wire 50	1.70
	Branch Switches.	
GE-42689.	Two to Two Single Branch 100	1.20
		3.80
GE-42424.	Three to Two Double Branch. 50	4.00
02	504 P. C.	

# G. E. PUSH SWITCHES AND PLATES.





(	GE-1587. GE-68247. Std. Pkg.	Price Each
GE-68247.	Single Pole 100	\$0.90
	Double Pole 50	1.40
GE-68249.	Three Way 50	1.40
	Plate for One Switch	.28
GE-1588.	Plate for Two Switch	.56
	257 P C	

#### G. E. SNAP SWITCHES. Pony Type. 5 Amp.



	GE-239. Std. Pkg.	Price
GE-242.	Closed Base 250	\$0.56
GE-241.	Closed Base, Indicating 250	.64
GE-240.	Slotted Base 250	.56
GE-239.	Slotted Base, Indicating 250	.64
	356 P. C.	

# G. E. NITE-LITE TRANSFORMER. 6 to 8 Volt, Two C. P. Lamp.



GE-190896. Price Each GE-190896. Price Each \$2.00 List, Net.



# G. E. CURRENT TAP. GE-692.

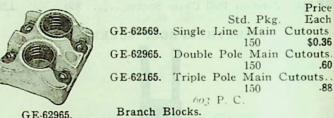
Price Std. Pkg. Each GE-696. Moulded \$1.00

# G. E. FUSE PLUGS.

.60

		125 Volts.	Price Each
	GE-66329.	Std. Pkg. 6 Amp	Each
		500	\$0.14
	GE-66331.		11
THE POPULATION OF THE POPULATI	GE-66335.	500 15 Amp	.14
		500	.14
GE-66331.		602 P. C.	

#### G. E. ENTRANCE SWITCHES AND PLUG CUTOUTS.



	003 P. C		
GE-62	965. Branch Blocks.		
GE-61935.	Two Wire Single Branch	100	.64
	Two Wire Double Branch	100	1.24
GE-62135.	Three Wire Double Branch	50	1.80
	656 P. C.		

#### G. E. TUMBLER SWITCHES AND PLATES.





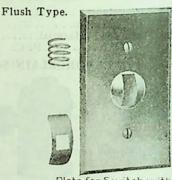


Plate for Switch with Moulded Handle (Cat. No. Includes Spring, Escutcheon Plate and Switch Plate)

		E-961. td. Pkg.	Price Each
GE-953.	Single Pole	100	\$1.00
GE-954.	Double Pole	50	1.50
GE-955.	Three Way	50	1.50
GE-961.	Plate for One Switch		.45
GE-962.	Plate for Two Switch		.80
	101 P. C.		

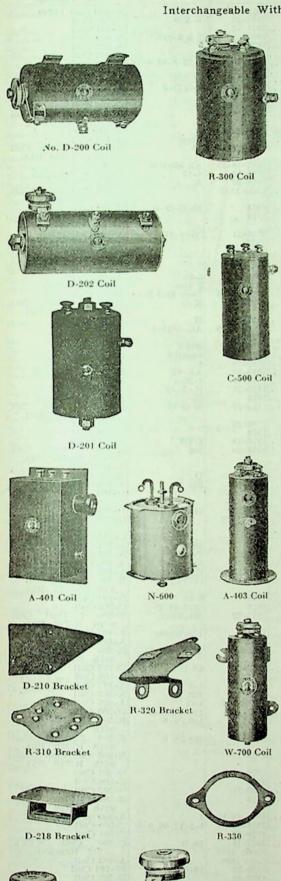


GE-969.

	TUMBLER e Type-5 An		
			Price
		td. Pkg.	Each
GE-970.	Closed Base		
		100	\$0.75
GE-969.	Slotted Base		
	District Day	100	.75
GE.973	Closed Base		
OL DIO.	Closed Dase	100	1.00
CEAR	C1-44 1 71		
	Slotted Base	Three	
40	6 P. C.	100	1.00

# JEFFERSON Automobile IGNITION COILS.

# Interchangeable With Any of the Standard Battery Ignition Systems.



D-240

The Jefferson line of Ignition Coils is 100 per cent complete, consisting of only a few standard types sufficiently flexible to displace any of the coils used as standard ignition equipment.

With the flexible Fittings, adjustable Caps and Terminals on the Jefferson Coils, it is possible to use one type to replace many of the different Coils now in general use.

Under starting conditions, the battery is at lowest ebb and requires a Coil that will produce a hot, intense spark to overcome this drop in voltage. Jefferson coils are designed to take care of this extreme condition.

Each Coil is furnished with a Wiring Diagram giving detailed instructions for installing.

#### Replacement for Delco Systems.

D-200. Battery Ignition Coil, 6 or 12 volt	\$10.00
D-201. Battery Ignition Coil5408	10.00
D-202. Battery Ignition Coil5403	10.00
D-210. Bracket for use with D-200 Coil	.50
D-212. Bracket for use with D-200 12-volt Dodge coil 252	.50
D-218. Bracket for use with D-200 Coil	.50
D-222. Bracket for use with D-200 Coil	.50
B-225. Bracket for use with D-202 Coil	.50
D-240. 6-volt Resistance Unit for use on D-200 Coil 258	.50
D-245. 6-volt Resistance Unit for use on D-202 Coil 259	.50
D-250. 12-volt Resistance Unit for use on D-200, 12-volt Dodge	
Coil 253	.50
D-255. Resistance Unit for use on D-201 Coil 256	.50

#### Replacement for Remy Systems.

R-300. Battery Ignition Coil, 6 or 12 volt5403	\$10.00
R-310. Bracket for use with R-300 Coil	.25
R-320. Bracket for use with R-300 Coil	.50
R-330. Bracket for use with R-300 Coil	.50
R-350, 6 or 12-volt Resistance Unit for use on R-300 or A-403	
Coil	.50
R-360. 6 volt Resistance Unit for use on R-300 two post and	
W 700 coils	50

Note-R-300 Coil furnished with either two or three binding posts, with or without Resistance Unit.

# Replacement for Atwater-Kent Systems.

A-400. Co.	l with Yale Lock Switch, 6 or 12 volt	\$13.00
A-401. Co.	without Switch, 6 or 12-volt	10.00
A-402. Tu	bular Coil without Resistance, 6 or 12 volt 4003	8.00
A-403. Tu	bular Coil with Resistance, 6 or 12 volt	8.00
A-404. Tu	bular Coil with Resistance, 6 or 12 volt	8.00

#### Replacement for Connecticut Systems.

C-500.	Battery	Ignition Co	il, 6 or 12	volt	 5403	\$10.00
C-501.	Battery	Ignition C	oil		 5406	10.00

#### Replacement for North East Systems.

N-600.	Battery	Ignition	Coil,	or or	12 vo	lt					4207	\$8.00
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# Replacement for Wagner Systems.

W-700.	Battery	Ignition	Coil	\$8.00
W-701.	Battery	Ignition	Coil	8.00

Important—6 and 12 volt Coils are not interchangeable. Be sure and specify voltage. Unless otherwise mentioned, standard 6 volt Coils will be furnished. If possible, give name, model and year of car for which Replacement Coil is required.

#### Replacement for Autolite Systems.

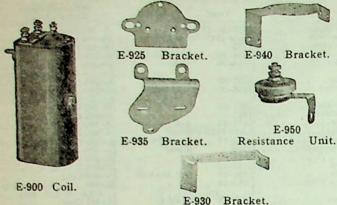
L-800.	Battery	Ignition	Coil5403	\$10.00
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Write for quantity prices.

	Jeffe	erson Auto	mobile Ignition	Coils Interchang	geable With Battery Ignit	Any of the	
Name	Year	Model	Jefferson Coils and Fittings	Name	Year	Model	Jefferson Coils and Fittings
Abbott	1916-17-18	6-44-8-80-6-	R-300 3 Post Coil with R-320 Bkt.	Dodge Truck Dort	1919-22 1916-20	5-A-9	N-600 Coil (12v) C-500 Coil
AceAllen		L&G .	1-403 Coil 2-500 Coil	Dort Durant	1921-22	4 & 6-cyl.	C-501 Coil L-800 Coil
Allen	1921	(	C-501 Coil	Eagle Earl	1917-18	5	A-403 Coil C-501 Coil
Am'can Beauty	1918-21	В	A-403 Coil C-500 Coil	Economy	1918-20	4-36-8-48-6-46	C-500 Coil C-501 Coil
Anderson	1918-19	20-400-A	C-500 Coil	Elcar	1916-17	D-4 D-6	D-200 Coil A-403 Coil
			with R-310 Bkt.	Elcar	1920-22	D-4 D-0	D-202 Coil D-200 Coil
Apperson		All Models	D-200 Coil R-300 3 Post Coil	Elgin	917-18-19	7	R-300 2 Post Coil with R-310 Bkt.
Apperson	1918-22	All Models	with R-310 Bkt. R-300 2 Post Coil	Elgin[Late		K	W-700 Coil A-403 Coil
Argo	1914-15-16		with R-310 Bkt. A-400 or 401 Coll	Emmerson Empire		Four 33	R-300 2 Post Coil (12v) R-310 Bkt.
Argo	1918-19		C-500 Coil R-300 3 Post Coil	Empire		All Models	C-500 Coil
Atlas Truck	1915	Union Model	A-403 Coil C-500 Coil	Enger	1918-22	6-12 A	D-201 Coil
Auburn		4-36	R-300 2 Post Coil	Essex			D-202 Coil with B-225 Bracket
Auburn	1		D-200 Coil with D-210 Bracket	Firestone		Э0-Е-98-Е	C-500 Coil A-400 or A-401 Coil
Auburn	1	38-39	R-300 2 Post Coil with R-320 Bkt.	Franklin	1916-21	Nine-9B	(12-volt) A-401 Coil (12v)
Auburn			D-200 Coll with D-210 Bracket	Franklin	921-22		A-404 Coil (12v) A-403 Coil
Auburn			R-300 2 Post Coil with R-310 Bkt.	Gem Truck General Motors	1918		C-500 Coil (6v) D-200 Coil
Austin	.1919	12-cylinder	2-D-200 Colls A-401 Coll	Ghent Gramm-Bern'n	1920-21	6-60 2 Ton	C-500 Coil N-600 Coil (6v)
Bay State	1922	D. 800 ME	D-202 Coil C-501 Coil	Grant		Four and Six K-G	R-300 2 Post Coil
Beil	. 1313-10	A-15-16-17-18 D-E-F	A-400 or 401 Coil A-403 Coil (12v)	Grant	1919-22	н	with R-310 Bkt. A-403 Coil
Bethlehem Tr'k Bour Davis	. 1920-21	17-B-Small Six	A-403 Coil (6v) D-200 Coil with	Hackett Handley Knight	1917-18-19	AL-1919-4	C-500 Coil L-800 Coil
Bour Davis		Bix Six	D-218 Bracket R-300 2 Post Coil	Hanson	1921-22	Big 6 Small 6	D-202 Coil L-800 Coil
Bour Davis		1011111	with R-310 Bkt. A-403 Coil	Harroun	1919-21	AA-42	A-403 Coil R-303 3 Post Coil
Bradley	. 1916-21	8-4-38	C-500 Corl R-300 3 Post Coil	Harvard Hatfield	1916-19 1917-21	4-20-4 H-A-42	A-401 Coil C-500 Coil (12v)
Briscoe	1	BA-24-4-24	with R-310 Bkt. C-503 Coil	Haynes	1913	55 30 to 45	A-400 or 401 Coil R-300 3 Post Coil
Briscoe	1920-21	4-34 All Models	C-501 Coil D-201 Coil	H. C. S. Special			with R-310 Bkt. D-201 Coil
Buick	. 1916-20	All Models	D-200 Coil D-202 Coil	Highlander Hollier	1919	8-188	D-200 Coil A-401 Coil
Buick Bush		18 All Models	D-209 Coil D-201 Coil	Hollier	1918-20	206	R-300 2 Post Coil with R-310 Bkt.
Cadillac Campbell	1918-19	4 T-17	A-403 Coil C-500 Coil	Hollier Homer-Laughlin	1921	D	A-403 Coil A-401 Coil
Case	. 1919-22	V 36-36-6-30	D-202 Coil A-401 Coil	Howard	1913-16	Six	A-400 or 401 Coil D-200 Coil with
Chalmers	1917-22	6-30-7	R-300 2 Post Coil with R-310 Bkt.	Hudson		54 to Super 6	D-218 Bracket D-201 Coil
Chevrolet	. 1915 to 17	All Models 490-F-A-D	C-500 Coil R-300 2 Post Coil	Hudson	Late 1922		D-202 Coil with B-225 Bracket
Chevrolet Tr'k			with R-330 Bkt. R-300 2 Post Coil	Huffman Hupmobile	1921	Four	C-501 Coil A-401 Coil (12v)
Cleveland	1 11		with R-330 Bkt. C-501 Coil	Hupmobile	1916	Four Four	A-401 Coil (6v) A-402 Coil (6v)
Cole	. 1913 to 16	666-850 860	D-201 Coil D-200 Coil	Hupmobile Interstate	1918-22	R-3 15-T-TR	A-403 Coil R-300 2 Post Coil
Cole		870	D-200 Coil with D-218 Bracket	Jackson		6-40	with R-320 Bkt. D-201 Coil
Cole		880 All Models	D-202 Coil D-201 Coil	Jackson	1916	68-3-48-34 394-6 cyl.	C-500 Coil R-300 2 Post Coil
Collier Truck	1918	870-M 6-C-D	C-500 Coil A-403 Coil	Jackson		4-cylinder	with R-310 Bkt. A-403 Coil
Columbia Comet	1918-19	4-H-4-C-51 C-53	D-200 Coil W-700 Coil	Jewett	1922	26-AV-B-27	A-403 Coil R-300 3 Post Coil
Comet Truck	- 1918-19	The state of the s	D-200 Coil A-403 Coil	Jordan	The second second	60-17	with R-310 Bkt.
Crawford	. 1918-22	4-cylinder	A-403 Coil R-300 2 Post (12v)	Kearns Truck	. 1918	4-8	C-500 Coil A-401 Coil
Crow-Elkart			R-310 Bracket C-500 Coil	King	1918	EE	A-402 Coil A-403 Coil
Crow-Elkart	. 1920-22	30-G to H55-6	C-501 Coil D-200 Coil	King. Kissel	. 1917-18	8-G 12-cylinder	D-200 Coil R-300 3 Post Coil
Cruiser Cunningham	. 1918-19	D 16	D-202 Coil D-201 Coil	Kissel		100 Pt. 6	with R-320 Bkt.
Daniels Dart Truck	1916	D-19	C-500 Coil (12v) D-200 Coil with			100 Pt. 6	R-300 2 Post Coil with R-320 Bkt. R-300 2 Post Coil
Davis		C-38-6-E-6-G	D-210 Bracket D-200 Coil with		A STATE OF THE PARTY OF THE PAR		with R-310 Bkt. D-201 Coil
Davis	1	All Models	D-218 Bracket D-202 Coil	Lange Leach	. 1915		C-500 Coil D-202 Coil
Davis Denby Truck	1920-22	4	A-403 Coll R-300 3 Post Coll	Lewis		6	R-300 2 Post Coil with R-320 Bkt.
Detroiter	1915-16	4-cylinder	with R-310 Bkt. R-300 3 Post Coil	Lexington		4 6-0-17 60 6 P	A-400 or 401 Coil
Detroiter		8-cylinder	with R-320 Bkt. C-500 Coil	Lexington	- 1920-22		C-500 Coll C-501 Coll
Detroiter Dispatch		645 G	D-200 Coil with 218 Bracket	Liberty	Early 1919	10-B	D-200 Coll with
Dixie Flyer	1917-20	L-S-35-HS-50	C-500 Coil	Liberty	1920-22	10-C	A-403 Coil W-701 Coil
Dodge	1		D-212 Bracket	Luverne Truck		760	D-202 Coil A-403 Coil
Dodge Truck		1		Lorrain Los Angeles	. 1914	4	A-403 Coil A-401 or 400 Coil
	1		D-212 Bracket	Loval Truck	11318	-	IA-403 Coll

Jefferson Automobile Ignition Coils Interchangeable With Any of the Standard Battery Ignition Systems								
1	Name	Year	Model	Jeiterson Coils and Fittings	Name	Year	Model	Jefferson Coils and Fittings
	n	-	T-4-5-7-13	R-300 3 Post Coil with R-320 Bkt.	Peerless	1915-16-17 Late 1917-21	4-6-8-4 cyl. 56-8 cyl.	A-401 Coil A-403 Coil
Maiboh Maiboh	m	1917 Early 1917-22	4 4-A-B	A-402 Coil A-403 Coil	Peerless	1922	D-18-6-18	A-404 Coil C-500 Coil
Majesti Marion	-Handley	1917 1917-18	6 6-40	A-401 Coil A-403 Coil	Pilot	1916-20	6-45	D-200 Coil with D-218 Bracket
Maxwe.	Truck	1917 Early	Model 25	D-200 Coil A-403 Coil	Pilot Premier		6-C 6-D .	
Maxwe. Maxwe.	1	1917-18-19 1920-22	4-25 25	A-403 Coil (12v) A-403 Coil	Premier			D-200 Coil with D-222 Bracket D-202 Coil
Maxwe	ll Truck	1920-22	4-25	A-403 Coil (12v) A-403 Coil	Pullman	1914-17	4-8	A-403 Coil A-400 or 401 Coil
Meteor		1914-15-16	4	D-202 Coil A-400 or 401 Coil	Regal	1916-17	E-D-F8-cyl.	C-500 Coll (12v)
			75-A-80-A-12 75-80	2-D-200 Coils D-200 Coil with 218 Bracket	Reo	1914	Four	A-400 or 401 Coil R-300 3 Post Coil
	an		in post and an	D-202 Coil A-403 Coil	Reo Truck	1920-22	All Models	R-300 2 Post Coil N-600 Coil R-300 2 Post Coil
McLau	ghlin	(Canadian)	Four	Same as Buick A-403 Coil	Ross		A-B-C	with R-310 Bkt.
Metz		Late 1919		C-500 Coil C-501 Coil	R. & V. Knight		J	W-701 Coil
Mitchel	11	1917-18	D-40-C-42 D-40-C-42-E-	C-500 Coil 3-300 2 Post Coil	Saxon		A-B 4 and 6 Four	A-401 Coil A-402 Coil
	Knight		40-42 All Models	with R-310 Bkt. C-500 Coil	Saxon	1917-18-	S-4-6 cyl.	R-300 3 Post Coil
Monito	r	1918-20	6 J-M	A-401 Coil J-500 Coil	Saxon	1916	Y-18	D-201 Coil
Monroe		1920-22	M-2-M-3-M-6 S-9	C-500 Coil C-501 Coil	Sayers & Scoville		Six	D-200 Coil with
Moon.		1914-15	All Models 6-40-6-30	D-201 Coil D-200 Coil with 210	Sayers & Scoville			D-200 Coil with D-210 Bracket
Moon.		1917-18	6-43-6-66-45	D-200 Coil with D-218	Sayers & Scoville Scripps Booth	1915	Four	D-202 Coll A-401 Coll (12v)
Moon.		1918-19	6-36	Bracket D-200 Coil with D-222 Bracket	Scripps Booth		G-D D-G-H-D-G-	with R-310 Rbt
Moon.	[Late	1919-20	Victory 6-68	W-700 Coil O-202 Coil	Seagraves	CONTRACTOR OF THE PARTY OF THE	39-6-40 B-39 F-4 F-6	R-300 2 Post Coil with R-320 Bkt.
Moore.		1918-20	30-C 70-T	2-500 Coil 2-500 Coil	Seneca	1918-20	A-4-27	D-201 Coil R-300 3 Post Coil C-501 Coil
Napole	on Truck	1920-21	10-1	2-500 Coil D-200 Coil	Sheridan		4-cylinder	R-300 2 Post Coil with R-330 Bkt.
Nash			681 to 683 All Models	D-202 Coil W-700 Coil	Sheridan Simplex Tractor		8-cylinder	D-201 Coil A-402 Coil
Nash	ruck	1922.	2017	O-202 Coil C-500 Coil	SkeltonStandard	1921	The state of	C-501 Coil A-403 Coil
Nation:	al	1917-18-19 1919-22	A-K-12-6-12 Sextet	2-D-200 Coils D-202 Coil	Stanwood	1918	C-18	A-403 Coil C-500 Coll
Norwa! Norwa!	lk	1915-16-17 Late 1917-21	6	1-400 or 401 Coil D-200 Coil	Stearns Knight	1916-19	4-8 All Models	R-300 3 Post Coil with R-310 Bkt
Norwal Oaklan	lk Truck	1913-14-15	12 to 49	D-200 Coil D-201 Coil	Stearns Knight Stephens	1917	60-65	A-403 Coil (12v)
Oaklan Oaklan	d	1916 1917	38-50-S 32-B-34	D-200 Coil with	Stephens	Late 1917- 18-19	70-74	D-200 Coil with D-222 Bracket
Oaklan	d	1916		D-222 Bracket 3-300 3 Post Coil	Stephens	1321		C-500 Coil C-501 Coil
Oaklan	d	1917-22		with R-320 Bkt. R-300 2 Post Coil	Studebaker	1914-15	4-cylinder	L-800 Coil R-300 3 Post Coil
	bile		54-53-42-55	with R-320 Bkt. D-201 Coil D-200 Coil with	Studebaker		6-cylinder 4- 40-6-50 SF-4-40-50-	R-300 3 Post Coil with R-310 Bkt.
	obile		4-cylinder 8-cylinder	D-210 Bracket D-200 Coil	Studebaker		ED-6 All Models	R-300 3 Post Coil with R-310 Bkt. W-701 Coils
Oldsmo	bile	1917-18	44-45-8 cyl.	D-200 Coil with D-218 Bracket	Stutz	1310-22	ri.	2-D-202 Coi's R-300 3 Post Coil
Oldsmo	bile	1917	37-6 cyl.	D-200 Coil with D-222 Bracket	Templar		445-645	with R-320 Bkt. R-300 3 Post Coil
Oldsmo	obile	1918 to 22	i-cyl.	R-300 2 Post Coil with R-330 Bkt.	Velie		4-G	A-400 or 401 Coll
Oldsmo	bile	1918-21	37-A 6-cyl.	R-300 2 Post Coil with R-320 Bkt.	Velie	1912 1915-16	Truck 15	A-400 or 401 Coil A-401 Coil
Oldsmo	obile	1920-22	45-8 cyl. 45-8 cyl.	D-202 Coil D-201 Coil	Velie Biltwell	1916	15	A-401 Coil R-300 3 Post Coil
Oldsmo	bile Truck.	1920-22		R-300 2 Post Coil with R-330 Bkt.	Velie Biltwell	1918-19-		with R-320 Bkt. R-300 2 Post Coil with R-320 Bkt.
	ekory Truck	1918 Early	M	C-500 Coil	Velie		48	A-403 Coil
Olympi	ian	19-21 1918 Late	45	C-500 Coil A-403 Coil	Velie Truck			R-300 3 Post Coil with R-310 Bkt.
Over!a:	sh Truck	1916 to 22	VII Models	N-600 Coil C-500 Coil	Vim Truck	1920-21	Truck Four	A-400 or 401 Coil D-201 Coil
Overla	ndnd Truck	1921	Panel Exep.	C-501 Coil C-500 Coil	Vixen Wahl Westcott	1914-15	Four	A-400 or 401 Coil A-400 or 401 Coil
Packet	Truck	1918-21	All Models	D-201 Coll A-403 Coll	Westcott	1915	Four 6-0-35-04 41-51	A-400 or 401 Coil D-201 Coil
	•••••			R-300 3 Post Coil with R-310 Bkt. R-300 2 Post Coil	Westcott			D-200 Coil with D-210 Bracket
			e 10 e 55	with R-310 Bkt.	Westcott			D-200 Coil with D-218 Bracket D-202 Coil
Pan-A	merican	1921-22	6-42, 6-55	A-403 Coll C-500 Coll	Wichita Tractor Wills St. Claire	1919	0000	A-402 Coil D-202 Coil
Partin	& Palmer	1914-15-16	20-38	A-400 or 401 Coil A-403 Coil	Willys Knight Willys Knight	1917	88-4-88-6 88-8	C-500 Coil R-300 3 Post Coil
Partin	& Palmer der	1917-18	20-8-45-32	C-500 Coil D-200 Coil	Willys Knight		88-4	with R-330 Bkt. C-500 Coil
Patriot	Truck	1920-21	34 Ton 4-32-6-48	A-403 Coil D-201 Coil	Willys Six Winther	1918-19	89	C-500 Coil A-403 Coil
	son		Early Model	D-200 Coil with D-210 Bracket	Winton	1922	Four	D-202 Coll A-401 Coll
Patter	son	1916-19	All Models	D-200 Coil with D-218 Bracket	Woods Dual Yale	1918 1917-18	54	A-402 Coll
Patter	son	1920-22	6-47	D-202 Coll  rollage is not specified it is	s understand that 6-roll	coils are requir		R-300 3 Post Coll

## JEFFERSON UNIVERSAL IGNITION COILS.



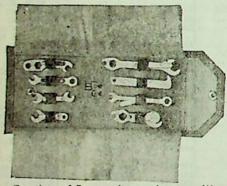
It is designed for replacement on all standard ignition systems.

An exclusive feature is the heavy duty condenser built into the Jefferson Universal Coil. This condenser can be utilized in the ignition circuit or eliminated, as the particular replacement requires. The same coil is used for six and twelve-volt systems. For twelve-volt systems, our special E-950 Resistance Unit is attached to the coil.

Windings and condenser are assembled in a Bakelite Tube, which is far superior to fibre or metal. Primary and secondary terminals are brought out conveniently at the top of the coil through a moulded Bakelite Cap. Detailed instructions and wiring diagrams are packed with each coil, showing quick and simple method of installation.

Universal Coil, complete with all necessary fittings for 6 or 12 volt systems. Packed in individual carton. ......6301 \$10.00 Each E-925, E-930, E-935, E-940. Brackets. Each. ... 257 E-950. 12 volt Resistance Unit. ... ... 252 .50

#### HANDY FOLDING POCKET MAGNETO WRENCH KITS.



No. 411. Consists of 7 wrenches and a cam lifter securely arranged in a serviceable leatherette folding pocket case.

A complete set of wrenches for adjusting the breaker contact points on Bosch, Eisemann, Remy, Splitdorf, Mea, and Delco Systems. Also a cam lifter for Remy battery system. Service men will recognize the handiness of this wrench kit. 

#### K-W SPARKITE CONTACT POINTS AND SPRINGS.



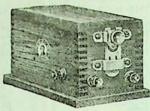
K-W "Sparkite" Contacts made expressly for K-W Ford Coil Units, give a better spark at slow cranking speed, and hotter spark at any speed.

K-W "Sparkite" Points are larger in size, and solid metal,

more efficient and long life.

The result of years of research and most highly recommended where a quality Contact is desired. Price, per pair...... 284 \$0.50 Price, per pair, in 100 pair lots................. 251

JEFFERSON GAS ENGINE COILS AND SWITCHES Box Type Coils.



This trouble-proof Coil is designed and guaranteed to give service under the most adverse operating conditions. It is most economical in battery consumption and produces at all times a hot, intensive spark.

The construction of the vibrator is such that the Coil cannot be adjusted to stop the engine from working; nor can it be adjusted to consume an excessive amount of battery current, thereby prolonging the life of the dry cells. Points used are made of the very best grade of tungsten.

Coils are assembled in dove-tailed, highly polished, sea-

soned oak cases, and are sealed in a waterproof compound.

		Price.
No. 51.	Single Cylinder, Box Type 2651	\$ 4.00
No. 52.	Double Cylinder, Box Type 5303	8.00
No. 54.	Ouadruple Cylinder, Box Type10606	16.00

#### STEEL CASE MAKE-AND-BREAK COILS.



Designed to answer the most rigid requirements of stationary and marine Make-and-Break Gas Engines. A hot, flaming arc is produced under compression with a minimum current consumption.

Coils are assembled in a substantial black-enameled steel case, and immersed in a special insulating compound,

which renders them impervious to moisture.

No. 10 is designed primarily for small engines rated up to  $2\frac{1}{2}$  horsepower, although it will also take care of some of the larger sizes. Types Nos. 15 and 20 are recommended for use on engines requiring a larger spark than that generated by the No. 10 coil, and where current consumption is an important factor. Types Nos. 30 and 40 are for use on large, heavy-duty engines, where current economy and a very in-tense and efficient spark is required.

No. 10.	21/4x21/4x6	inches, 3	pounds.	Price1003	\$1.75
				Price1156	2.00
No. 20.	21/4x21/4x6	inches, 3	pounds.	Price1352	2.25
No. 30.	$3 x3\frac{1}{4}x4$	inches, 5	pounds.	Price2257	3.25
No. 40.	3\\\4x4\\\8x6	inches, 7	pounds.	Price3304	4.50

Above coils equipped with Single Throw Switch, add 20 cents to list price. Above Coils equipped with Double Throw Switch, add 50 cents to list price.

#### STEEL BASE BATTERY SWITCHES.



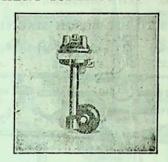
No. 1-Single Throw.

These Switches are metal throughout, and are suitable for all classes of low-voltage work. The jaws are of springclip contact, which makes a positive electrical connection.

No. 1.	Single Threw, plain handle	\$0.25
No. 1.	Single Throw, insulated handle188	.30
	Double Throw plain handle 303	35

No. 2. Double Throw, insulated handle.....227 .40

# ATWATER-KENT IGNITION FOR FORD CARS.



Type L. A.

Adaptable to any Ford, new or old model. Easily installed without removing radiator. On Fords equipped with starting and lighting this system is operated on the current from the storage battery, using one Ford coil with vibrators screwed down tight. This leaves three spare coils for emergency. Eliminates timer.

coils for emergency. Eliminates timer.

The same system can be used on Fords not equipped with starting and lighting in conjunction with one Ford vibrating coil, using current from magneto.

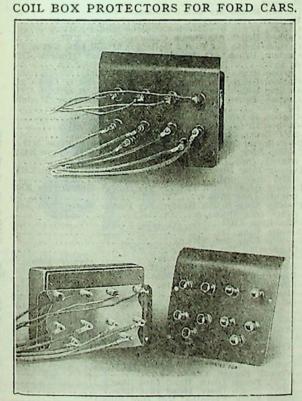
No. 3321. Type L A System, including resistance unit, all cable and fittings. Price each..........\$11.75

#### SPECIAL COIL FOR FORDS.

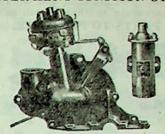


The Ford coil and coil box can be eliminated entirely by substituting Atwater-Kent High Power Special Coil for Fords. This coil is non-vibrating and absolutely water-proof. Contributes to easy starting even in cold weather. No. 3386. Special Coil for Fords. Price, each........\$5.00

# 254 P. C.



 ATWATER-KENT IGNITION SYSTEM.

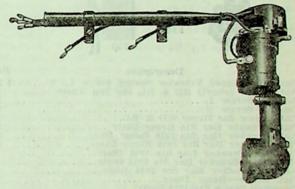


Furnished with fittings readily applicable to 1919 and later model Fords, equipped with starting and lighting systems. Mounted on a special gear cover plate, which takes the place of the regular Ford gear cover plate enclosing the hardened steel special gears, guaranteeing lubrication and quiet operation. Equipped with the automatic spark advance feature, which adds to the ease and pleasure of driving; also equipped with an adjustable advance lever. The starting battery is used as a source of current for this system.

Complete instructions, fully illustrated and easily followed, sent with system.

Type R A De Luxe. Price, each......\$24.00

# KINGSTON IGNITION SYSTEM FOR FORD CARS.



It completely wipes out all commutator trouble resultant from dirty contacts and uneven wear; obviates trouble from loose, broken, oil-soaked wires or wires with raveled insulation, and provides the best and highest possible character of ignition; the kind in almost universal use on high-priced cars everywhere. Easily installed and insures delivery of the spark to the power at exactly the right instant, every time and always.

Price, complete, ready to install, each......\$20.00

#### KINGSTON CUT-OUTS FOR FORD CARS.

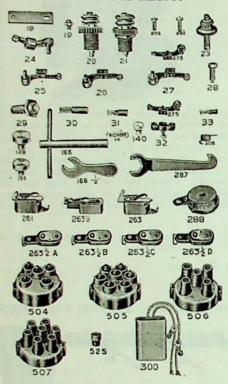


May be placed directly upon the generator; heavy steel cover renders it waterproof.

#### MAGNETO AND DISTRIBUTOR REPAIR PARTS.

These parts consist of practically all the popular items generally used for replacement on all makes of automobiles, trucks and tractors. The material and workmanship are of the very highest grade. Every precaution has been taken to make each part accurate so that it will properly fit the system it is intended for.

#### PARTS TO FIT REMY.

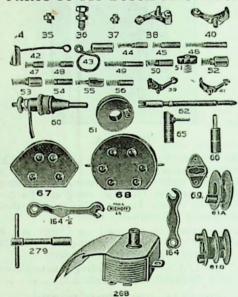


No.	Description	Price
18—Platinum-pe 19—Plat. Screw	ointed Vibrator Spring fits S. L. T (short) RD & RL and Ign. Distr	\$ 3.50 3.35 3.50
22_Plat Scrow	rew Lrew Sret RD & RLret Remy RD & RLr	3.50
24-Plat Break	ker Bar fits Remy Distr	3./5
27—Tungsten B	Breaker Bar fits 1916 Distr Breaker Bar fits 1918 Distr	80
28-Plat. Screw	eaker Bar fits 1916 Distrv—Remy Distr	3.60
29S-Tungsten	Screw fits 1918 Distr. rew fits 1916 Distr. sh fits Remy Distr. Models S. L	40
21 Carbon Pru	seh fite Pamy Distr Models RD. Rl.	20
33—Carbon Bru 140—Plat. Conta	ish fits Remy Ignition Distr., 4 Cyl	3.60
150-Tungsten C	Contact (small) fits No. 27S Contact (large) fits No. 27 r Remy	40
	Block, 6 Cyl. type.	
263—Distributor	Unit 6 volt	50
2631/2-Distribute	or Rotar consists of 4 patterns. Each cars using the respective patterns is lis	50
below: C	Order accordingly. Outor Rotar (4 Cyl., clockwise) used on t	fol-
lowing ley-Da	cars: 1. Chevrolet—1918. 4 Cyl. 2. Havidson Motorcycle—1918, Model (18-J).	ar-
lowing	outor Rotar (6 Cyl., clockwise) used on to cars: 1. Chalmers—1918, 6 Cyl. 2. Gran	11
hile-1	6 Cyl. 2. Kissel Kar— 1918, 6 Cyl., Six. 4. Oakland—1918, 6 Cyl. 5. Oldsr 1918, 6 Cyl. 6. Paige—1918, 6 Cyl. 7. Scrip —1918, 6 Cyl. 8. Velie—1918, 6 Cyl.	no- ps-
263½-C—Distrib on fo 19 Ser	butor Rotar (6 Cyl., counter clockwise) u llowing cars: 1. Studebaker—1918, 6 C ries. 2. Mitchell—1918, 6 Cyl.	уі.,
on th Cyl.,	butor Rotar (4 Cyl., counter clockwise) use following cars: 1. Studebaker—1918 19 Series.	, 4
300—Cond. Fill 309—Tension C 504—Four Cyl. 505—Six Cyl. Di	r for Remy	1.50 15 2.25 2.50 2.50
525—Brase Terr	minal Nut for Distributor to fit 504 and 5 3006 each. No. 26—2703 each.	05 20

Bal. of Nos. 403 P. C.

No. 25-2701 each.

PARTS TO FIT BOSCH MAGNETO.



All Types of Bosch Armatures Rewound	
	Price
34-Platinum-pointed Screw (long) fit Bosch	3.50
35-Platinum-pointed Screw (short) fit Bosch	
36-Plat. Screw fits Bosch Dual Battery Breaker	3.50
37-Plat. Screw (short) for Battery Breaker (see cut 35).	
38-Breaker Lever with Plat, Screw (clockwise) fits Bosch	
DU	5.50
39-Breaker Lever with Plat. Screw (anti-clockwise) fits	
Bosch DU	5.50
40 Breaker Lever with P P Screw (clockwise) fits DR &	

.20

.15

.15 .15 .15

.20 .25 .20

20 20 25 1.55 1.40 1,40 1.40 1.40 2.25 2.25

3.50 .85 .85 6.50 10.00 .50 .50 6.00 6.50 .75 1.10 .30 3.60 .30 2.50 2.75

Breaker Lever with P. P. Screw (clockwise) lits D. C. D. See cut 41.

D. See cut 41.

Breaker Lever with P. P. Screw (anti-clockwise) fits Bosch DR & D.

Grounding Brush with 2" Cable for Base Plate...

Grounding Brush with 2%" Cable for Base Plate...

Carbon Brush fits Bosch Collector Model DAV Ball 5.50 Bearing ....-Carbon Brush fits Bosch Collector Model DAV Plain .15 Bearing Carbon Brush fits Bosch Collector Models DA-P, P & -Carbon Brush fits Bosch Collector Model ZEV.
-Carbon Brush fits Bosch Collector Model ZEI.
-Carbon Brush fits Bosch Collector Model DU, DR & D.
Carbon Brush fits Bosch Collector Bar Models—DR

& D...

51—Carbon Brush fits Bosch Distr. Model DU...

52—Carbon Brush fits Bosch Distr. Models DR & D, 4 Cyl.

53—Carbon Brush fits Bosch Distr. Models DR & D, 6 Cyl.

54—Carbon Brush fits Bosch Dual Distr. Holder Models

-Carbon Brush fits Bosch Collector Bar Models-DR

52—Carbon Brush fits Bosch Distr. Models DR & D, 4 Cyl.
53—Carbon Brush fits Bosch Distr. Models DR & D, 6 Cyl.
54—Carbon Brush fits Bosch Dual Distr. Holder Models DR & D.
55—Carbon Brush fits Bosch Distr. Model ZR.
56—Carbon Brush fits Bosch Collector Model ZR.
60—DU4 Brush Holder, complete.
60-B—Collector Ring Brush Holder Complete Type NU..
60-C—Slip Ring Brush Holder, fits Bosch Motorcycle ZEV (right) (not illus.).
60-D—Slip Ring Brush Holder, fits Bosch Motorcycle ZEV (right) (not illus.).
60-E—Slip Ring Brush Holder, fits Bosch Motorcycle ZEI (right) (not illus.).
60-F—Slip Ring Brush Holder, fits Bosch Motorcycle ZEI (left) (not illus.).
61-Slip Ring Brush Holder, fits Bosch Motorcycle ZEI (left) (not illus.).
62-Connecting Bar DU4.
61-A—Slip Ring Du4.
61-B—Slip Ring Du4.
62-Connecting Bar DU4.
62-Connecting Bar DU4.
62-Connecting Bar DU4.
63-Distributor Plate Du4 Dual.
64-Distributor Plate Du4 Dual.
65-Elbow Terminal, complete.
66-Straight Terminal.
67-DU4 Distributor Plate.
69-Distributor Brush Holder only.
69-A—Distributor Block, fits type B-4 and B-6 (not illus.).
614-Wrench for Bosch.
614-Wrench for Bosch.
614-Wrench for Bosch.
614-Wrench for Bosch.
628-Complete, Con. for all Bosch types.
631—4 Cyl. Bosch Distr. Head (not illus.).
633-Bosch Distr. Terminal Nut (not illus.).
633-Bosch Distr. Terminal Nut (not illus.).

NU4, DU4 and D4 Bosch Rewound Armatures

Nos. 45 to 60-603 P. C.

Nos. 60B to 279—206 P. C.

No. 531—Each 205.

MAGNETO AND DISTRIBUTOR REPAIR PARTS.

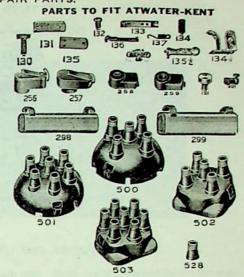
# 83 84 S 81

No. Description	Price
70-Plat, Contact Screw EM, EN, EA (s	ort) \$ 3.50
71-Plat. Contact Screw G4 (long)	
72-Plat. Spring, fits G4	3.50
721/2-Pressure Spring with fibre button.	
73-Long Plat. Screw Breaker EM	3 50
74-Long Plat. Screw Breaker EU, EA, H	D 3.50
75-Plat. Breaker Screw Assembly A7	4.50
76—Contact Lever Plot A7	4.50
76-Contact Lever Plat. A7	3.50
78—Breaker Lever with Plat. Screws, fits	EU. EA. EL 5.65
79—Breaker Lever with P. P. Screw, fits	ED 5.65
80—Breaker Lever with P. P. Screw, fits	EM 5.65
81—Steel Brush, fits Distr. Model E	
82—Carbon Brush, fits Distr. Model E	
83—Carbon Brush, fits Collector Model A	7
84—Carbon Brush, fits Collector Models 1	A DIL DD DM
EB	
85-Carbon Brush, fits Distr. Models E.	
EB	, EU, ED, EM,
86-Carbon Brush, fits Conductor Bar M	
87 Cause Prush, hts Conductor Bar N	odel EM
87—Gauze Brush, fits G4	
88—Collector Brush, fits G4	
89—Distributor Brush, fits G4	
90—Ground Brush, fits G4	
139—Plat. Contact to fit No. 72	3.20
136-Wrench for Eisemann	
269—Condenser for EM type	
Condenser for G4 type	3.50
269-S-Condenser Type G. S. 4 type	3.50
270-Condenser Type EU type	6.00
310-Slip Ring for G4, GR4 1st & 2nd 1	
2nd Ed	1.75
3101/2-Rotating Distributor Disc., fits Eis	mann type G S4
(not illus.)	1.25
337-Breaker Lever type G4 2nd Ed. (clock	wise) 5.00
338-Breaker Lever type G4 2nd Ed. (ant	
G4 and EU Rewound Armatures, A	
Nos. 70 to 80, 403 P. C. Nos. 81	
Nos. 139 to 338, 204 P.	C.

# PARTS TO FIT CONNECTICUT DISTRIBUTOR

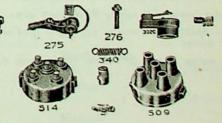


No. Description	Price
114—Tungsten Screw	\$0.35
115—Tungsten Rivet	.35
115-A-Tungsten Screw to fit Breaker Bar	.65
117—Carbon Brush	.20
161-C-Wrench for Connecticut	.12
264—Distributor Block Model 16	.40
264-A-Distributor Block, fits Connecticut Model No. M15	.,.
(not illus.)	.40
264-B-Distributor Block, fits Lexington (not illus.)169	.40
265—Distributor Block Model 15	.40
202 Octamonal I ober Model 15.	.10
323—Octagonal L-shape Wrench	.10
516-Four Cyl. Distributor Cap (Old type) to fit Model	2.25
15T	2.25
517-Six Cyl. Distributor Cap (New type) to fit Models	0.50
16 and 16C	2.50
518-Six Cyl. Distributor Cap (Old type) to fit Model	0.50
1	2.50
513—Terminal Nut to fit 516 and 518	.25
520 Four Cyl. Distributor Cap (New type) to fit Models 16	-
and 16C	2.50
1236-F-Original Connecticut Breaker Plate, complete. 2102	3.00



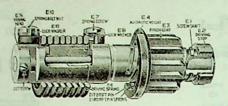
No. Description	Price
299-Condenser for Model K3	\$ 0.90
299-A-Condenser for Model K3 new type	.90
301—Latch	1.00
500-Four Cyl. Distr. Cap to fit Types K2 and K3, without	
terminal	3.50
501-Six Cyl. Distr. Cap to fit Types K2 and K3, without terminals	3.75
502-Four Cyl. Distr. Cap to fit Types CC and CA, without	
terminals	3.25
503-Six Cyl. Distr. Cap to fit Types CC and CA, without	
terminals	3.50
528—Terminal Nut to fit Types 500, 501, 502 and 503	
130—Tungsten Screw (Old Style)	
131—Tungsten Spring (Old Style)	
132—Screw, K-EW (Platinum)	
132—Tungsten Screw K-EW	
133—Spring, K-EW (Platinum)	
134—Screw, Type FW (Tungsten)	.75
135½-Stationary Arm, Type CC (Tungsten)	
136—Lifter, fits A. K.—4, 6 Cyl	
136—Lifter, fits A. K.—8 Cyl	
137—Lifter Springs, fits A. K.	.25
151—Tungsten Contact to fit Nos. 134½ & 135½	.25
256-Distributor Block, fits Types K2 and H, 4 Cyl, Models	.50
257-Distributor Block, fits Types K2, H and K3, 6 Cyl.	
Models	.50
258-Distributor Block, fits Type K2, 8 Cyl. Models	.60
259—Distributor Block, fits Type CC	.50
298—Condenser for Model CC	.90
298-A-Condenser for Model CC new type	.90
Nos. 256 to 259, 603 P. C. Bal. of Nos. 396 P. C.	

# PARTS TO FIT NORTH-EAST



No.	Description	Pric
153-Tungsten Contac	t to fit No. 275	. \$ 0.5
275-Tungsten Breake	er Arm	9
276-Tungsten Contac	et Screw	5
302-Distributor Rota	r (plain spring)	1.2
302-C-Distributor Ro	tar (carbon spring)	1.2
306-Carbon Brush		2
340-Coil Tension Spr	ing to fit No. 275	1
509-Four Cyl. Distr.	Caps, Screw Terminal type	. 4.0
514-Four Cyl. Distr.	Caps, Plug Terminal type	3.0
515-Terminal Nut to	fit 514	3
Nos. 302-302C, 651 P.	C. No. 514, each 2003. Bal, of Nos. 5	06 P. C

# PARTS TO FIT ECLIPSE BENDIX DRIVE



- 1 Screw Shaft 2 Driving Stop Nut 3 Pinion Gear 4 Counter Weight 5 Driving Head 6 Driving Spring 7 Shaft Spring Screw

- § Lock Washer
  9 Spring Bolt
  10 Spring Bolt Nut
  12 Compression Sleeve
  17 Drift Pin
  18 Drift Pin Spring

Do not order by above numbers, order by part number given below.

# COMPLETE DRIVE

Part No.	Price No.				Price
900 (R-10)-"Special Small Hollow" Type, Shaft .500" diam.,	906 (R-1	3)-"Large Hollow"	Type, Shaft .802"	diam., each	n. 8.00
each	\$8.00 907 (L-1	3)-"Large Hollow"	Type, Shaft .802"	diam., each	h. 8.00
901 (L-10)—"Special Small Hollow" Type, Shaft .500" diam., each		3X)—"Large Hollo	ow Heavy'' Type,	Shaft .80	2"
902 (R-11)-"Small Hollow" Type, Shaft .625" diam., each.			ow Heavy" Type,		
903 (L-11)-"Small Hollow" Type, Shaft .625" diam., each.		n., each			8.00
904 (R-11X)-"Small Hollow Heavy" Type, Shaft .625" diam	"R" in	ndicates screw three	ads and spring coils	are right h	nand,
each	8.00 "L" in	ndicates screw thre	ads and spring coil	s are left h	and.
905 (L-11X) "Small Hollow Heavy" Type, Shaft .625" diam.,		"11," "13" refer to d gear regularly us	to the number of sed.	teeth in c	ounter

### 203 P. C.

#### PARTS TO FIT BENDIX DRIVE

Part No. Pri		Part	Price
No. Pri	ce	and the second s	
910 (R-10-6)—Right hand, seven coil spring, used on 900 and 902	75	916 (R-13-7)—Shaft spring screw, %" diam., used on 13 tooth drives	15
910X (R-11-6X)-Right hand, extra heavy, seven coil spring			
to fit Essex drive, used on 904	.00	917 (R-12-9)—Head spring thru bolt, %" diam., used on 12 tooth drives	.15
903	.75	918 (R-13-9)—Head spring thru bolt, %" diam., used on 13 tooth drives	
911X (L-11-6X)—Left hand, extra heavy, seven coil spring, for extra heavy 11-tooth drive, for 905	.00	919—Nut for 917.	
912 (R-13-6)—Right hand, eight coil spring, used on 906	./5	920—Nut for 918	15
912X (R-13-6X)—Right hand, extra heavy, eight coil spring, used on 908	.00	921—Lock washer for 915, 915F, 907	.05
913 (L-13-6)—Left hand, eight coil spring, used on 907	.75	922—Lock washer for 916, 918	05
913X (L-13-6X)—Left hand, extra heavy, eight coil spring, used on 909	.00	923 (R-10-109)—Head spring bolt, 3" diam., used on 10 tooth drives	
914-Left hand, seven coil spring to fit Ford drive	.75	924 (SR-10-109)-Head spring bolt, 1/4" diam., used on 11	1
915 (R-12-7)—Shaft spring screw, %" diam., used on 10, 11,		tooth drives	15
12 tooth drives	.15	925—Lock washer for 923	05
915F-Shaft spring screw, &" diam., replacement for Ford			
5024	.15	926—Lock washer for 924	
	156 P	C C C C C C C C C C C C C C C C C C C	

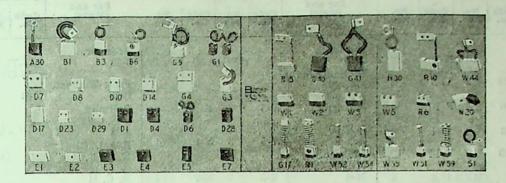
#### COIL FILES



Thin, flexible, very fine cut teeth. With this file, points can be dressed down smooth and flat without unnecessary waste.

Platinum.	price,	per	dozen1251	\$2.50
Tungsten.	price,	per	dozen	2.50
Tungeton	price	ner	dozen, mounted on card	3.00

# STARTER AND GENERATOR BRUSHES



# BRUSH SPECIFICATIONS FOR 1915 TO 1922 AUTOMOBILES.

1915 Automobile.

				100										
Car and	Gener	rator	Mo	tor	1 7.61	Gener	ator	Mo	tor	T-RW	Gene	rator	- Mo	tor
Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Abbott Detro E-44, 8-85 K & D	it. E-3	2	E-1	4	Chandler. Early 15-B	W-54 G-10	2 2	W-43 G-3	4 2	Dort. 5-A 1915 Early	0 N	(M-G) (M-G)		4 4
Allen. 33, 34, 35 1915	W-53-T E-3		W-43 E-1	4 4	Chevrolet. Baby Grand Royal Mail	E-3	2	E-1	4	Empire. 31, 33, 40 2 S. L.	R-8	(M-G)	R-3	4
Alter. 4-27	(	(M-G)	R-3	4	H-2, H-2½	E-3	2	E-6	2	Enger. 1915	G-10	2	G-3	2
American. La France Apperson.	W-54	2	W-47	4	Model 4-40 6-50 10-4G, 6-51	D-13		D-19 D-14 D-7	2 2	Firestone. Columbus.	G-10	2	G-3	2
1915 Auburn.	B-3 B-3-C	2 1	B-13,R B-13, L	H. 2 H. 2	Big Six 8-50 8-60	D-1 D-20 D-22 D-28	1 2	D-18 D-29 D-29	1 4	Franklin. 1915 Early		(M-G)	D-42 D-48-C	2 2
4-36, 40L 4-40, 36L 6-46 4-38	R-2 R-13-C R-6	1 4	R-10 R-10	4	Corbin.	D-24-C	1 M-G)	N-20	4	8 Glide.	1.0	(M-G)		2 2 2 2
6-40, 6-40A 6-44 Briggs-Detro	D-13 D-27	1	D-14	2	Corbit Truck.		M-G)		4	30, 36 Grant.	W-52		W-43 A-2-T	2
B-5, C Briscoe.	R-11 R-12	4 2	R-10	4	Crawford. 6-35	W-54		W-44 W-44-I	2 2	Halladay.	W-54	2	W-44	2
A-38, 4-38 8 cyl. Buick.	2 30	(M-G)		4	Crow-Elkhart. E-45	R-11 R-12	4 2		- 68	Haynes. 30, 33, 34, 35 31, 32	L-3 L-3-C	2	W-44-L	2
C-24 C-25 C-36, C-37	D-6	9	D-8 D-10	1	23, 25 Cunningham.	(	M-G)	D-50	2	Herff-Brooks.		M-G).		4
C-55, C-54 Cadillac.	D-13		D-14	2	R	G-1	*2	G-6	4	Hollier. 8 cvl.		M-G).		4
8-51 Carter Car. 7 & 9	D-13 D-6		D-14 D-8 D-10	2 1 1	Davis. 35, J, K, 38, A, B, C	W-54		W-44 W-44-I	2 2	Hudson. 6-40, G, H	D-13	2 1	0-14	2
Case. 25, 35, 40	W-54	2	W-46 W-46-	*1 L *1	<b>Dole.</b> 1915	(	M-G)	10 M. II	4	6-54 'Hupmobile. 32-HA	D-4 W-51	1	D-7 D-18 W-43	1
Chalmers. 24, 26A, 26B 29, 6-48	2000		0.35	Date.	Dodge. 1915		M-G) (S-C)		4	K, N		M-G) \		111
Master Six 32, 6-40	G-10	(M-G)	C-1 G-3	4 2	Dorris. 1A-4, 1A-6	W-54		W-46 W-46-L	*1	N	B-8 B-8-C		3-10	4

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

# BRUSH SPECIFICATIONS FOR 1915 AUTOMOBILES—Continued.

	Gene	rator	Mo	tor	DESCRIPTION OF THE PARTY OF THE	Gene	rator	Mo	tor		Gene	rator	Mot	tor
Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Imperial.		(M-G)		2	Mitchell. 1915		(M-G)	A-30	4	Premier. 6-56	R-1-T		R-10	4
64 Interstate.	G-10	(S-C)	G-3	1 2	Moline-Knight MK-40 7-P, 5-P					Pratt-Elkhart.	R-13-C G-10	1 2	G-3	2
T Jackson.	R-6	. 4	R-10	4	Roadster C-G	W-5	3	E-1	4	Pullman. 6-48, 4-24				
33, 44, 46 6-40 where Delco used	E-3 D-13	2	D-1 D-14	4	MK-50 7-P }	W-5	3	W-1	4	4-32 Regal. D, E, F, R		(M-G)		4
Jeffery. 6-48	2 10	(M-G)	U-5	8	M-2, M-3, M-4	E-5	2	E-2	4	R, C, H			D-48-C	2
Cross Country Chesterfield King.	В-3	(M-G)	U-2 B-17-T	8 2	Moon. 6-40, 4-38 National.	D-13	2	D-14	2	1915 Reo. R-5, M-6	W-23 R-1-T	2	R-10	4
8 cyl., C. D. Kissel Kar.	W-23	2	W-28	4	4 cyl.	G-1 W-54	*2	G-3 W-55	2 4	Saxon. Six		(M-G)	G-4	4
4-36, 6-42 6-60 Krit.	W-54	2	N-50-T	4	Oakland. 43, 48, 62	D-1		D-7 D-18	1 1	4 Runabout 1915 Late Sayers-Scovill.	G-10	(M-G)	W-26 G-3	2
M. O Lexington.	J-3	2	J-2	2	37, 6-49 36	D-13 D-6	2 2	D-14 D-8	2	4 cyl.	D-6		D-10 D-8	1
Six Locomobile.	W-54	. 2	W-44 W-44-I	$\frac{2}{2}$	Oldsmobile. 6-54, 6-59	D-1	2	D-10 D-7	1 2	Scripps-Booth.			B-18, L. 3-18, R. 1	
R, M Lozier.	W-51	*2	W-46-1	*2		D-13 D-27	1	D-14	2	Sphinx.			B-1S-S	1 4
77, 84 Lyons-Knight	G-1	*2	G-6	4	80, 81, 82-6 86-6	E-4 E-3	2 2	E-1 E-1	4 4	Stearns-Knigh All 4 & 6 cyl.		W.	Α-00	
1915 Marion Handl		(M-G) (S-C)	N-21	1	84-GF 83, 85 Packard.	E-7	2	E-1	4	Big Four Light Four Studebaker.	G-1 G-10	*2	G-7 G-3	*2
48, A-4 Marmon.	W-54	2	W-44 W-44-1	L 2 2	3-3°, 5-48 Parge Detroit. 6-36, 6-38	B-3	2	B-1	4	All Models Stutz.	W-5	3	W-6	4
41 Early 48	B-20 J-3	4 2	B-27 J-7	4 4	6-46 Partin-Palmer.		. 2	G-3	2		R-1-T R-13-C		R-17	4
Maxwell. Early 25	G-10	2 (M-G)	G-3 S-1	2 6	1915 Patterson. 6-48, 4-32	G-10 D-13	2 2	G-3 D-14	2 2	Velie. 22, 6 cyl.	R-6 R-6-C		R-15 R-15-T	2 2
Carlton McFarlan. 1915	C-20 W-53	T 2		4	Pathfinder.	D-20 W-54	1	W-44	2	Wescott. 4-40 White.	J-2	2	J-5	2
McIntyre. 1915		(M-G)		4	Peerless.	11-01	2	W-44-I		TAH, TED Wilcox Trux.		(M-G)	W-90	4
Mercer. 20-70, 22-72 22-73		(M-G	) U-5	8	6-48, 6-38 6-60 6-48, 6-55	G-1 G-1	*2 *2	G-2-C G-3	2 2	Willys-Knight. 84-GF	R-6 E-3	4	E-1	4
Meteor. 1915 Metz.		(M-G		4	Pierce-Arrow. 6 cyl. Pilot.	W-54		W-47	4	Winton. 21-A	В-3	2 B	3-13,R.I	H. 2
1915		(M-G) (S-C)		4	55	W-53-	T 2	W-44 W-44-I	2 2	20, 22-A	B-3-C B-6 B-6-C	2 E	3-13, L. I 3-11, R. I 3-11, L. I	H. 2

# PYRAMID BRUSH SPECIFICATIONS FOR 1916 AUTOMOBILES Brush specifications for later years are given on following pages.

Abbott-Detr	oit.				Apperson.					Bell.				
6-44	R-6	2	R-15	2	1916					1916 4-cvl.	(1	I C	D-50	11/2
	R-6-C	1	R-15-T	2		W-53-T	2	W-55	4	Biddle.	(1	1-0	) D-00	2
8-44	E-3	2	E-1	4			2	B-1	4	1916 D	W-54	0	TT 44	
Allen.	20	-	13-1	-	8-17, 6-17	B-3-C	ĩ	D-1	4			2	W-44	4
37	TIT =0 m	0	VII. 44	0		D-0-C				Briggs-Detro			_	
31	W-53-T	2	W-44	2	Argo.						R-6	4	R-10	4
			W-44-L	2	1916 All Models	(M	-G	D-50	2	Briscoe.				
Alter.						(	-	,15 00	~	8 cyl.	13	10	)A-30	4
4-27 and 8	(1)	1-C	)A-30	4	Auburn.					Buick.	(1	1-0	)A-30	4
American.	12		,11.00		6-40A, 6-40	D-13	2				D 0		_	
						D-27	1	D-14	2	D-34, D-35	D-6	2	D-8	1
LaFrance							-				D-20	1	D-23	1
1916	W-54	2	W-47	4	6-38, 4-38		2	R-15	2	D-44, D-45	D-6	2	D-23	1
Anderson.						R-6-C	1	R-15-T	2	D-46, D-47	D-24-C	1		1
Series 12	1		W-44	2	Austin.				12001			1	D-8	1
6-40, 13	W-53-T	2				W 52 T	0	W FF		D-54, D-55	D-13	2		
0-10, 15	J W-00-1	2	W-44-L	2	1916 Hy King	W-53-T	2	W-55	4	D-4 Truck	D-27	1	D-14	2

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

BRUSH SPECIFICATIONS FOR 1916 AUTOMOBILES-Continued

	1		BRUS	H SPE	CIFICATIONS	FUR 1	916 A	O TOW	COPILI	Jo Continued	1		1	
	Gene	rator	Мо	tor	. 11116	Gene	rator	Mo	tor		Gene	rator	Mo	tor
Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Cadillac.					Federal.					Jackson.	,			
53-8	D-13 D-20	2	D-14	2	1916 Truck	W-54	2			34, 44, 46 68, 3-34,	E-3	2	E-1	4
Cameron.	D-20				Ford. Where Apple					3-49		9	T O	
1916 Case.		(M-G)	A-30	4	system used	A-30	4			Wolverine Jeffery.	E-7	3	E-2	4
T-40					Where G. & D. single unit					Chesterfield	D.C			
Early T-17	W-53-	T 2	W-55	4	system used	G-4	2			Six	B-6-C	2	B-10	4
Chalmers. 24, 26A, 26B					Where G. & D. old two unit					4-86	B-8	2		
Master Six		(M-G)	) C-1	4	system used	0.10		0.2	2	4-62	B-8-C B-9	1 2	B-10	4
29, 6-48 J 32, 6-40	G-10	2	G-3	2	Model YT Where Fisher	G-10	2	G-3	2		B-9-C	1	B-10	4
32-B	R-20	2	G-3	2	system used	F-30	2	F-31	2	Kelly-Springfi	ield. W-54	2	W-55	4
35-B, 6-30	W-54	2	W-55	4	North East system	N-20	4			1916 King.	W-94	2	W-99	4
Chandler. Late 16	G-22	2	G-18	2	Westinghouse			*** 40		D	W-23		W-28	4
1	G-22-0	1			system		(M-G)	W-42 W-42-I		A, E, EE Kissel Kar.	R-21	2	R-22	4
Chevrolet. Baby Grand								W-41-0		6-38	W-53-7	Γ 2	N-51-T	4
Royal Mail	E-3	2	E-1	4	Where A, B, C system used	R-21	9	R-22	4	Kline. 6-36	W-53-1	г о	W-44-I	. 2
4-90 Cole.	E-7	2	E-2	4	Where Disco	10-21	-	10-22	Winds.	Krit.	W-55-	. 2	VV -1-1-1	
9-4G, 6-50					used old	D-50	2			1916		(M-G)	N-20	4
10-4G, 6-51	DI	0	D-18 D-7	1	Franklin.	D-00				Lambert. 4 cyl.	R-6	4	R-10	4
Big Six 3	D-1 D-22	2 2	D-29	1 4	8		(M-G)	D-43	. 2	6 cyl.	R-6	2	R-15	2
	D-20	1			CVA.			D-43-C	2		R-6-C	1	R-15-T	2
8-60	D-28 D-24-0	2 1	D-29	4	Glide.	W-53-	T 2	W-44	2	Lauth-Juerge	w-54	2		
Crawford.					14:17			W-44-I	. 2	Lenox.		-		
1916 Crow-Elkhart.	W-53-	T 2	W-55	4	Gramm-Berns	tein. W-54	2	W-55	4	O, D,	W-54	2	W-44	2
E-45	R-11	4			B. A. Gramm'			W-55	aur day	Lexington.	1		W-59	2
	R-12	2	D 50		1916	W-54		W-44	2	6-00, 6-P	W-53-7		W-44-L	
23, 25 30, where		(M-G)	) D-50	2	Grant.					Locomobile.				
Dyneto used	D-47	2	D-46	2	Early V	777.5		A-2-T		R, M	W-51	2	W-46-L	*2
Cunningham.	W 50	T 0	337 47	10,11	Late V	W-5	3	W-6	4	Lozier. 77, 84	G-1	*2	G-6	4
Daniels.	W-53-	T 2	W-47	4	-Halladay. R-2	W-53-	T 2	W-44-I	. 2	Madison.				
A	W-53-	T 2	W-55	4				W-44	2	4, 5, 7	R-6-C		R-15 R-15-T	2 2
Davis. G. E. F.	D-13	2			Where Electric	С			-	Marion Handl			10-10-1	-
C-38	D-20	1	D-14	2	system used	E-7	3	E-2	4	K	W-53-7	2	W-44	2
Where W. H. used	W-53-	T 2	W-44	4	Haynes.			2 9700		Marmon.	B-32	2	B-28	2
Detroiter-Six.			.,	Titel	30, 33, 34, 35	L-3-C	2	L-1	2	Maxwell.				
6-45	E-7	2	E-2	4	Herff-Brooks.	D-0-C			DESCRIPTION OF THE PERSON OF T	25 McFarlan.		(M-G)	S-1	6
Dixie. Dixie Flyer	D-47	2	D-46	2	Eight		(M-G)	A-30	4	T & X	W-53-1	2	W-62	2
Dodge.				Caraly	Hollier.		(M-G)	A-30	4	McLaughlin.	R-6	. 9	R-15	2
1916		(M-G)		4	Hudson.		(1.1 0)		1111		R-6-C		R-15-T	2
Late		(M-G)	N-22	2	6-40 GH	D-13		D-14	2	McIntyre.	G-10		C 2	0
Dorris.		(S-C)	N-22-C	23/11	6-54	D-4	2	D-7 D-18	1	Mercer.	G-10	2	G-3	2
1A-4, 1A-6	W-54	2	W-46	*1	Super Six	D-13		D-14	2	20-70, 22-72	}	21.00		
Dort.			W-46-I	*1	Trum mahila	D-20	1			22-73 Meteor.		(M-G)	0-5	8
5-A	W-53-	T 2	W-59	2	Hupmobile.	B-8	2			6 cyl.	R-6 .		R-15	2
Elcar.			W-44-I	2	11.	B-8-C		B-10 W-55	4	Metz.	R-6-C	1 1	R-15-T	2
A, B, C,					N-1 N-2, N-3	W-53-1 B-9	2		4	1916	G-10	2	G-3	2
Early D,	D-47	2	D-46	2		B-9-C	1	B-10	4	Michigan. Hearse.	W-54	2 1	W-44	2
E, F Elgin.					Indian.					Mitchell.		-		100
Six E-16	D-47	2	D-46	2	Motor Cycle 1916	A-42	2			1916 Early Series		M-G)	A-30	4
Empire. 45, 60	E-3	2	E-1	4	Interstate.			n		7-42	W-54		W-55	4
Enger.		193			T	R-6 R-6-C		R-15 R-15-T	2 2	Moline-Knigh	t.			
1916	W-53-	T 2	W-59 W-44-I	2 2	Imperial.	14-0-0		. 10-1	-	M K-40 M K-50	W-5	2 1	W-1	4
Farmack.			W-44-1		1916	W-53-	r 2	W-44	2	7-P				
		(M-G)	)A-30	4				W-44-L	- 1	5-P Roadster			E-1	4
					10.0	C 14	LOO	41	13 Y 1	et Prices see Pr	1CF	100		

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

Generator Motor Generator Motor Generator M	otor
Car and Model Code No. Req. No. Req. Car and Model Code No. Req. N	No. Req.
Monitor.  32	a tubat
Monroe. Pierce-Arrow Sphinx	-
M-2 E-5 2 E-2 4 38-C-4 1 1916 (M-G)A-30	4
Moon. 6-30, 6-44 D-13 2 D-14 2 48-B-4 W-54 2 W-62 4 Standard.	
D-20 1 Pilot. E W-53-T 2 W-55	4
Moreland. 6-45 D-28 2 Stearns Knight	This is
1916 W-54 2 W-62 4 Promise	10.5
National. 6-56 R-1-T 2 SKL-452 W-54 2 W-55	4
6 cyl. W-54 2 W-55 4 R-13-C 1 R-10 4 St. 3-35 Sterling. Sterling.	
W-44-L 2 inghouse used W-54 2 W-62 4 1916 E-5 2 E-2	4
Nelson. Stewart-Six.	2
Four (M-G) U-6 6 6-48, 4-24 Where West- (M-G) A-30 4 W-53-T 2 W-44 W-44-	
inghouse used W-54 2 W-55 4 Page! Studebaker.	
Oakland. D. E. F. R (M-G)D-43 2 All Models. W-5 3 W-6	4
38 D-13 2 D-14 2 D-48-C 2 Stutz. D-27 1 Where Heinze 2 R, S R-1-T 2	
32 Little \ R-6 2 R-15 2 system used H-32-T 2 H-30-T 2 S-Bearcat \ R-13-C 1 R-17	4
Six { R-6-C 1 R-15-T 2 Reo. Sun.	.0100
20 D D 00 1 R-0 2 R-14 4 MgM CM	$\Gamma$ $\frac{2}{2}$
Little Six D-20 1 M.6 R.6 2 R-15 4 Thomas	18 30
R-6-C 1 1916	100
D-27 1 Republic All models L-7 2 L-5	2
8-11 D-28 2 D-29 4 1916 W-53-T 2 W-44 2 Tourine.	
Overland. W-H-L 2 1916 W-51 2 W-55	4
80-0 E-3 2 E-1 4 1016 W-51 2 W-62 4 114moun.	4
S2 S5 F7 2 F1 4 Richmond.	74 3
75 E-5 2 E-2 4 1916 W-54 2 W-44 2 15-45 G-10 2 G-3	2
Packard. 1-38, 2-38,   Roamer. Roamer. Roamer. Roamer.	$\begin{bmatrix} 2\\2\\2\\2 \end{bmatrix}$
3-48, 4-48. RA-R-5 B-9 2 B-10 4 Wescott.	- STITE OF
3-38, 5-48, B-3 2 B-1 4 B-9-C 1 41, 51 D-13 2 D-14	2
2.25 Eight R-21 2 R-22 4 White	
Paige Detroit. Russell. W. 52 T. a. W. 44 a. Tah, Ted. (M-G)W-90	4
W-44-L 2 Wilcox	
Partin-Palmer. Saxon. 1916 R-6 4	
1916 G-10 2 G-3 2 1916 4-cyl. (M-G) W-20 4 Whichita	
6.45 1 D-28 2 D-29 4 models D-70 2 D-78 4 1916 W-54 2 W-44	2
6-45R D-20 1 4 Roadster (M-G) D-74-L 1 Willys-Knight	L 2
Pathfinder. SA, B, C Seagrave.	4
Twin Six W-53-T 2 W-55 4 1916 W-54 2 W-62 4 Winton.	eshod
1-B, 2-B D-28 2 D-29 4 Scripps-Booth. 20, 22A B-6 2 B-11,R	
1-C, 2-C D-20, 1 C. & D. W-5 3 W-6 4 1916 B-6-C 1 B-11,R	.11. 2

# BRUSH SPECIFICATIONS FOR 1917 AUTOMOBILES Brush specifications for later years are given on following pages.

Abbott. 6-44	R-6 2 R-15 R-6-C 1 R-15-T	2	Apperson. 8-16, 6-16 8-17, 6-17	B-9	2	B-10 4	Bour Davis. 17 Briscoe.	R-21	2	R-22	4
Allen.		Total .	8-18, 6-18	B-9-C	ĩ		4-24	A-38	2	A-39	4
37 Classic	W-53-T 2 W-59 W-58-C 1 W-44	$\begin{bmatrix} 2\\2 \end{bmatrix}$	Auburn. 6-39, 6-39-C		2	D 17 0	Where Auto Lite used Buick.	E-7	3	E-2	4
Alter. 1917 American Six	(M-G) A-2-T	4	6-44 Bell.	R-6-C D-13	2	R-15 2 D-14 2	D-44, D-45 D-46, D-47	D-6 D-24-C	2	D-23 D-8	1 1
A A	G-22 2 G-18 G-22-C 1	2	17	G-22 G-22-C	2	G-18 2	D-34, D-35 E-34, E-35	D-6 D-24-C	2	D-23 D-8	1
Anderson. 12, 6-40 13, 6-40	W-53-T 2 W-44-L W-44	2 2	Biddle. D	G-22 G-22-C	2	G-18 2	Cadillac.	D-13 D-20	2	D-14	2

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

			BRUSH	SPE	CIFICATIONS	FOR 19	917 A	UTOM	OBIL	ES—Continued				
103000 70	Gene	rator	Moto	r		Gener	rator	Mot	or	minds , n	Gene	rator	Mo	tor
Car and Model	Code No.	No. Req.		No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Cameron. 1917	G-22 G-22-C	2 1	G-18	2	Ford. Where Gray & Davis	0.00	0	. tolis	13	Jordan. 60 King.	B-9 B-9-C	2 . 1	B-10	4
Case. Early T-17 Late T-17 Chalmers.	W-53-7 E-7	Г 2 3	W-55 E-2	4 4	New two- unit sys- tem used Model 220	G-22 G-22-C	1	G-18	2	E, EE, Kissel Kar. 6-38	R-21	2 2	R-22	4
35B, 6-30 Where Electri A-Lite used		2 2	W-55 E-2	4	Where Fischer system used Where Ever Ready		2 (M-G)	F-31 E-70	2 2	6-42 Kline.	R-6-C W-53-7		N-51-T N-51-T W-44	4 4 2
Chandler.	W-64-0	1	W-55	4	system used Genemotor	-0		E-70-C	2	6-36, 6-38F, 6-38G Lambert. 80, 90	W-53-7		W-44-L R-15	
Chevrolet.	G-22 G-22-C	2 1	G-18	2	Gen'l Elec. Co. Heinze-Spring-	G-41-T G-40-C				Lexington. 6-O-17, 6-P	R-13-C W-53-7	1	R-15-T W-59	2 2
Early F-5 F-2, 4-99 D Baby Grand	E-7	3	E-2	4	field Westinghouse system	H-32-T		H-30-T W-42 W-42-L	1	Liberty. 10-A	D-28 D-20	2	W-44-L D-29	4
F, Ď Cole.	E-4 E-7	1	E-2	4	Where ABC system used Where Disco	R-21	2	W-41-C R-22	4	Locomobile. R7-38 M7-48	W-51	4	W-62	4
8-62 8-80	D-28 D-26-C D-28 D-20	$\begin{array}{c} 2 \\ 1 \\ 2 \\ 1 \end{array}$	D-29 D-104	4 4	used (Old system) Where new	D-50	2			Lozier. Model 77, 84 Madison.	G-22 G-22-C	2	G-18	2
Crawford. 6-17-40 Crow Elkhart.	W-53-	r 2	W-55	4	two unit system used Franklin.			D-58	2	Madison. 4, 5, 7 Maibohm.	R-6 R-6-C	2 1	R-15 R-15-T	2 2
CE-33, CE-35 Cunningham. V-2	D-47 W-53-	2 T 2	D-46 W-47	2	9 Glide. 6-40	W-53-T		D-43-C W-59	2 2	A, B Majestic. M & A	D-59 R-21	2 2	D-58 R-22	2
Daniels. A, B Davis.	W-53-		W-55	4	Grant.	W-10		W-44-L W-6		Marion-Handl A, 6-40	W-53-7		W-59 W-44-L	
6-J, 6-H 6-I, 6-K Detroiter.	D-28 D-20	2	D-29	4	Hal Twelve. 12 Halladay.	W-53-T		W-55	4	B, 6-60 Marmon. 34	W-53-T B-32		W-55 B-28	2
6-45 Dixie. Dixie Flyer	E-7 D-44	3	E-2 D-46	4 2	R, S Haynes. 36, 37, 39,	W-53-T W-58-C		W-55	4	Maxwell. 25 McFarlan.		M-G)		6
Dodge. 1917, 4 cyl.	D-44-0 N-22	2			40, 41 }	L-7 L-3-C	2	L-5	2	127 Mercer. 20-70, 22-72	W-53-T			4
Dorris. 1B-6	N-22-0 W-54	2	W-55	4 *	Early-Eight 17-8 18-6		(M-G) (M-G)	A-30 A-1-T	4 4	22-73 Meteor. 75, 75A 80, 80A	D-27 D-20	M-G)	U-5 D-29	8
Dort.	W-53- W-58-		W-59 W-44-L	2 2	Hudson. Super Six	D-13 D-20 D-4	1	D-14 D-18	2	Metz. 25	G-22 G-22-C		G-18	2
Drexel. 1917	B-9 B-9-C	2	B-10	4	Hupmobile. NU. N.	D-20 W-53-7	1	D-7 W-55	1 4	Michigan. Light Six Big Six Chassis	D-28 D-20	2	D-29	4
B-17 Elcar. Early D.E.F.	W-53-	T 2	W-55 D-46	4	Interstate T Imperial.	R-6 R-6-C	1	R-15 R-15-T	BIRTH	Mitchell. 6-40 C-42	A-38 W-53-T		A-39 W-55	4
Late D.E.F.	D-44 D-44-0	2	D-46	2	1917 Indian.	W-53-T		W-44 W-44-L	2 2	Moline-Knigh 5P, 7P Monitor. 6-40	t. W-5 H-32-T	3 2	E-1 H-30-T	4 2
Six Empire. 45	W-10 E-3	3	W-6 E-2	4	Motor cycle Jackson. 68, 3-48 3-49, 3-50	A-42 E-3	2 2	E-1	4	Monroe. 1917 Early Touring	E-4		E-2	+
60-R, 70 Enger. Twin Six	E-7 W-53-	3	E-2 W-59	4	Wolverine 3-34 Jeffery.	E-7	3	E-2	4	M-3, M-4 M-5 Moon.	E-7 E-7	2 3 2	E-2 E-1	4
Erie. 33, 34	D-44	2	W-44-L	2	4-92, 6-71 7-72 3 & 11 Ton	B-9 B-9-C	2	B-10	4	6-43, 6-66 Murray. 70-T	D-28 D-20 W-53-T	1	D-29 W-55	4
	D-44-0	1	D-46	2	Trucks	0 11 1	C	1 7	2 D	ices, see Pages 1		-	00	-

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For Prices, see Pages 165-166.

# BRUSH SPECIFICATIONS FOR 1917 AUTOMOBILES-Continued

	Gene	rator	Mo	tor	WILLE WY	Gene	rator	Mo	tor	100025 100	Gene	rator	Mo	tor
Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
National. 6 cyl. 12 cyl.	W-54 W-53-	T 2	W-55 W-44 W-44-1	4 2 2	Premier. 6-B Princess.	D-28 D-20	2	D-29	4	Stephens. 65, 75 1917 Late	E-7 D-28 D-20	2 2 1	E-2 D-104	4 4
Oakland. 34, 50, 32-B	D-28 D-20	2	D-29	4	4-36-F Pullman. 4-24, 4-32	D-59 A-38		D-58 A-39	2 4	Sterling. 1917	E-5	2	E-2	4
Oldsmobile. 45, 43 Olympian.	D-28 D-20	2	D-104	4	Regal. J S cyl.	A-00	(M-G)		2	Studebaker. SF-4-40 SK-8-33 Ed. 50	W-5	3	W-6	4
B.M. Overland. 83, 85 85-4	E-7	3	E-2 E-1	4	Reo. Early R, M, S Later R, M,	R-6 R-6-C R-16		R-15	4	Stutz. C. R. S. S-Bearcat	R-1-T R-13-C		R-17	4
75, 75-B 90, 85-6, 88-8 88-4, 86-6	E-5 E-7 E-3	2 2 2	E-2 E-2 E-1	4 4 4	S Riddle Coach.	R-16-0		D-29	4	Sun.	R-6 R-6-C		R-15 R-15-T	2 2
Packard. 2-25, 2-35 E&D Trucks Paige-Detroit		2	B-1	4	Roamer. R-5, R-A	D-20 B-9 B-9-0	2	B-10	4	Templar. 4-45, 6-45	R-16 R-16-C		R-18	4
6-39, 51 Pan-American C-1,	G-22	2	G-18	2	Ross. Eight Saxon.	R-21		R-22	4	Thomas. 1917 All Models	L-7 L-3-C	2	L-5	2
Light Six Series G Partin-Palme	G-22 G-22- r.		G-18	2	B-4-R, S-4 Sayers-Scovill	W-10 D-28		W-6 D-29	4	Velie.	R-6 R-6-C		R-14 R-14-T	2 2 2
20 32 Paterson	D-59	2	D-58	2	Scripps-Booth	D-20	ĩ	D-23	nin's	Wescott.	R-6 R-6-C	ī	R-15 R-15-T	2
6-45, 6-42 6-45R Pathfinder. Twin Six,	D-28 D-20	1	D-29	4	4 cyl. Where Remy sys- tem used	R-6-0	2 1	R-14	4	Series 17 White.	D-28 D-20	1	D-29	4
1B, 2B, 3B, 1C, 2C Peerless.	D-28 D-20	2	D-29	. 4	Where Wagne system used Singer.	W-10	3 2	W-6	4	16 Valve Wilcox Trux.	L-7 L-3-C	2	L-5	2
56 56-2	G-22 G-22-0 E-4	2	G-18 E-2	2	Standard.	W-54 A-38	2	W-55	4	1917 Willys-Knight.		4	cortic	Dog
Pierce-Arrow. 38-C-4		1	W co	No.	Stearns-Knigh			W-63	4	88-4, 88-6 88-8 Winton.	E-3 E-7	2 2	E-1 E-2	4
48-B-4 66-A-4 Pilot.	W-54	2	W-62	TO DE	SKL-4-32 SK-8-33 4 cyl. Where	W-54		W-55	4	22-48, 22-A Yale.	B-6		3-11,R. 3-11,L.	
6-45	D-28 D-20	1	D-29	4	Remy sys- tem used	R-6-0		K-15	4	8 cyl	D-57	2	D-56	2

BRUSH SPECIFICATIONS FOR 1918 AUTOMOBILES
Brush specifications for later years are given on following pages.

Allen. Early Series 41	W-53-T	2	W-59	2	Biddle. Early D	G-22	2	G-18	2	Chalmers. Late 6-30	W-64	2	W-55	4
	W-58-C E-3	1 2	W-44 E-2	2 4		G-22-C	1				W-64-C	1		
Late Series 41 American Six.	E-3	2	E-2	4	Bour-Davis. Early 17	G-22	2	G-18	2	Chandler. Late	W-64	2	W-55	4
	G-22 G-22-C	2	G-18	2	Daily II	G-22-C	1	0 10	-	Date	W-64-C	1	11-00	-13
Anderson.	G-22-C	1			Briscoe.	Tr.	0	T O	FREE	Chevrolet.				
6-40	W-64	2	W-55	4	B4-24 24, T-24	E-4 E-7	2	E-2	4	4-90,FA-5, FA-2	} E-4 E-7	2	E-2	4
Apperson.	W-64-C	1		25	Buick.				all (I	D-4	E-4 .	2	E-1	4
6-18, 8-18, 25	B-9-C	2	B-10	4	E-34, 35, 37,	D-6	9	D-23	,	Cole.	E-7	1	,	
Auburn.	B-8-C	1			50, 44,45,49 (E-4 Truck)	D-24-C	1	D-8	1	870	D-28	2	D-104	4
6-39, 6-39B	R-6 R-6-C	2	R-15	2	Cadillac.	2 1 1 5 g					D-20	1		
6-44	D-13	2	R-15-T D-14	2 2	57	D-13	2	D 14	0	Columbia.	D 04	_	D 00	BIELL
	D-20	1		-		D-20	1	D-14	2	C and D, E	R-21	2	R-22	4
Austin.	T) 00	0	D 00		Case.	W-64	2	W-55	4	Comet.	D.44			
	D-28 D-20	2	D-29	4	U	W-64-C	1	W-99	*	C-50, 51	D-44 D-44-C	1	D-46	2

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

			BRUSE	I SPE	CIFICATIONS	FOR 1	918 A	UTOM	OBILI	ES-Continued	-			
9000 M	Gener	rator	Mot	or		Gene	rator	Mo	tor		Gene	rator	Мо	tor
Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Commonwealth					Halladay.	TI 50 /	т о	W ==	4	Moline-Knight C, G, L	E-4	2	E-2	4
Ultra 4-40	D-44 D-44-C	2	D-46	2	R, S	W-53-7 W-58-0		W-55	-	C, G, L	E-7	ī	15-2	7
THE REAL PROPERTY.	D-44 D-44-3	2	D-46	2	Harroun. 4 cyl. AA-1	R-16 R-16-0		R-18	4	Monitor. C-R, N-O C-4, O-6,	H-32-7 D-44	2	H-30-T	
	W-64 W-64-0	2 1	W-47	4	Haynes. 36, 37, 38,	L-7 L-3-C	2	L-5	2	M-6 / Monroe. M-3, M-6,	D-44-C E-4	2	D-49	2
	W-53-1	2	W-55	4	39,40,41,42 Hollier. 8-188, 6-186					M-4 } Moon.	E-7	ĩ	E-2	4
Davis. 6-I, 6-H,					200 Hudson.	(	M-G) A	1-30	.4	6-36, 6-45, 6-66	D-28 D-20	1	D-104	4
Small 6-I,	D-28 D-20	$\frac{2}{1}$	D-29	4	Super Six	D-13 D-20	2	D-14	2	Nash. 6-81-6-83	D-28 D-20	2	D-104	4
6-J Dixie.					Hupmobile. Series R	B-9	2			National.			2 101	
Dixie Flyer	D-44 D-44-C	2	D-46	2	Interstate.	B-9-C		B-16 R-15	4	6, 12 cyl.  Oakland.	B-9 B-9-C	1	B-10	4
1918	1. 1/2	(M-G)	N-22 N-22-C	2	Jackson.	R-16 R-16-C		R-15-T		34-B	R-16 R-16-C	2	R-18	4
Dorris. IC-6, 6-80	W-64 W-64-0	2 1	W-55	4	68, 3-34, 3-49, 3-50 Wolverine	} E-7	3	E-2	4	Pacemaker }	D-28 D-20	2	D-104	4
Dort.	W-64	2			Jordan.	B-9	2			Overland. 90	E-4	2	E-2	4
Elcar.	W-64-0	2	W-55	4	Kissel Kar.	B-9-C		B-10	10	85-6 89-6	E-7 E-7 E-4	1 3 2	E-2 E-1	4 4
D. E. F. Elgin.	D-44-C	1	D-46	2	100 Pt. Double Six	R-6-C		N-51-T	4	Packard.	E-7	ĩ		nand
A Empire.	W-10		W-6	4	King. EE, F	B-9 B-9-C	2	B-10	4	3-25 Paige-Detroit.	B-3	2	B-1	4
50, 51, 70A 73 Essex.	E-4 E-7	1	E-2	4	Kline. Early	W-53-7		W-55	4	6-55 6-39	R-16-C G-22	1 2	R-18	4
1918 Fiatt.	D-28 D-20	2	D-104	4	6-38GA Lexington.	W-64 W-64-0		W-55	4	Paterson.	G-22-C	1	G-18	2
E-17, 55 Ford.	W-54	2	W-55	4	Model 60, 6-R	W-64		W-64-C W-55	1 4	6-46, 6-46R Peerless.	D-28 D-20		D-29	4
Where G & L new two	C 00	0		qua	Liberty. 10-B	D-28 D-20	2	D-104	4	56-2 Pierce-Arrow.	E-4 E-7	1	E-2	4
			G-18 F-31	2	Locomobile. Early, 38 Series 2 48 Series 2	W-51	4	W-62	4	38-C-4 48-B-4	W-54	2	W-62	4
Where Ever- Ready sys-	E-70		E-70-C	2	Late, 38 Series 11 48 Series 11	W-64 W-64-0		W-55	4		D-28 D-20	2	D-29	4
Genemotor Gen'l Elec.	G-41-T		G-40-C	1	Lozier. Early 82, 84	G-22 G-22-C	2	G-18	2	Princess. 4-36-F	D-59		D-58	2
Heinze Spring- field Westinghouse	H-32-7		H-30-T W-42	2	Maibohm. A & B	D-59		D-58	2	Regal.	E-4 E-7	2	E-2	4
system Where new Dis	sco	N. S.	W-42-L W-41-C		Marmon. 34	B-6 B-6-C	2 1	B-17	4		R-16 R-16-C	2 1	R-14	4
two unit sys- tem used Dyneto Single	D-59	2	D-58	2	Maxwell. 25 McFarlan.	.(	(M-G)	S-1	6	Roamer. D-4-75 C-6-54	B-9 B-9-C	2	B-10	4
system Franklin.	D-43		D-43-C	1	Mercer.	W-53-7	2	W-62	4	Saxon. B-4-R, S-4, )	W-10		W-6	4
Series 9  Glide			D-43-C	2 2	Series 4 Metz.	W-64 W-64-C	2 1	W-62	4	Scripps-Booth. H-S, D-S,				9100
6-40 Grant.	W-53-		W-55	4	25	W-64 W-64-C	2 1	W-55	4	6-39, 40	R-16 R-16-C	1 1	R-18	4
Hal.	W-10 W-53-7	3 F 2	W-6 W-55	2	Mitchell. C-42	W-64 W-64-0		W-55	4	E, G Stearns-Knight			W-63	4
	W-58-0		00		D-40	A-38	2 .	A-39	4	4, 8	W-54		W-63	4

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

BRUSH SPECIFICATIONS FOR 1918 AUTOMOBILES—Continu	BRUSH	SPECIFICATIONS	FOR 1918	AUTOMOBILES-Continue
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Car and Model	Generator		Motor		THE RESERVE OF	Generator		Motor		TOLORS 1	Generator		Motor	
	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req
Stephens.	D-28 D-20	2	D-104	4	Templar. 4-45, 6-45 A-445	R-16 R-16-C	2	R-18	4	White. 16 Valve	L-7 L-3-C	2	L-5	0.0
Studebaker. SH-4-40, EG-6, EH-6-50 Stutz.	W-5	3	W-6	4	Velie. 38, 39	R-6 R-6-C	2 1	R-15 R-15-T	2	Winton. 33, 48	B-6	2	B-11, R B-11, L	.н.
4-C, 4-R, 4-S S-Bearcat	R-1-T R-13-0		R-17	4	Wescott. S-17 18, 18A	D-28 D-20	2	D-29	4	Willys-Knight 88-4 88-8, 89-6	E-3 E-7	2 3	E-2 E-1	

#### BRUSH SPECIFICATIONS FOR 1919 AUTOMOBILES Brush specifications for later years are given on following pages.

Allen.			Columbia.		Glide.		
Series 41	E-3 2	E-2 4	CD & CS	R-21 2 R-22 4	40	W-64 2	
Late	E-9 2		The state of	E-9 2	The state of the s	W-64-C 1 W-65	4
	E-9-C 1	E-10 4		E-9-C 1 E-10 4	Grant.		
American.			Comet.	0/807.10712		W-5 3 W-8	2
В	W-64 2		C-51	D-45 2	Halladay.		
	W-64-C 1	W-65 4	Telled.	D-45-C 1 D-49 2		W-53-T 2 W-44	2
American B	eauty.		Commonweal			W-44-L	2
	G-22 2			D-45 2	Harroun.		
	G-24-C 1	G-23 2		D-45-C 1 D-49 2		R-16 2	
Late	G-19 3		Crow-Elkhart		1	R-16-C 1 R-18	4
Anderson.		Snahevi		D-45 2	Harvard.		
400-A-E	W-64 2			D-45-C 1 D-49 2	4-20	W-10 3 W-6	4
400-G	W-64-C 1	W-65 4	Cunningham.		Hatfield.	1 0-10-W	
Apperson.	, .,		V-3	W-64 2	Small	D-59 2 D-58	2
8-18	B-9 2	11.0	1 7 77	W-64-C 1 W-55 4	Large	D-45 2	11 7
	B-9-C 1	B-10 4	Daniels.		- Suinge	D-45-C 1 D-49	2
Auburn.			В	W-64 2	Haynes.	2 10 0 1 10 10	atalia.
6-39 K	R-16 2	***		W-64-C 1 W-55 4	and nob.	L-7 2	
6-39 H	R-16-C 1		Davis.	11-01-0 1 11-00 1		L-3-C 1 L-5	2
Austin.	, 1000		I	D-28 2	Hollier.	B-0-0 1 B-0	
	.D-28 2	. 18		D-20 1 D-104 4	mon.	(M-G)A-30	4
	D-28 2 D-20 1	D-104 : 4	Disbrow.	D-20 1 D-104 4	Holmes.	(M-G)A-50	
Bell.	10-20	D-101 ; 1	DISDION.	L-7 2	mos.	(M-G) D-43	2
Don.	D-45 2			L-3-C 1 L-5 2	NOT IT	D-43-C	2
	D-45-C 1	D-49 2	Dispatch.	L-3-C 1 L-3 2	Hudson.	D-49-C	-
Biddle.	D-45-C 1	D-40 2	Dispatch.	(M-G) U-5 8	Huuson.	D-13 2	
H	G-22 2		Dixie Flyer.	(M-G) U-5 S			2
11	G-24-C 1	G-23 2	Dixie Flyer.	D-45 2	Ummahila	D-20 1 D-14	13002
Late	G-19 3			D-45-C 1 D-49 2	Hupmobile.	Do o	
Briscoe.	G-19 3	G-20 4	Dodge.		N	B-9 2	
B-24	F 4 0	AND THE PARTY OF	Dodge.	(M-G) N-22 2	D .	B-9-C 1 B-10	4
D-24	E-4 2 E-7 1	E-2 4	Domin	N-22-C 1	R	B-9 2	
Total			Dorris.	THE CL O	Yealana	B-9-C 1 B-16	4
Late	E-9 2		6-80	W-64 2	Jackson.	77	011/
Buick.	E-9-C 1	E-10 4	D	W-64-C 1 W-55 4	349	E-7 2 E-2	4
	100 0	DO 1	Dort.	TIT OIL O	Late	E-9 2	THE PERSON
H-6-44-47	D-6 2		15	W-64 2		E-9-C 1 E-10	4
H-6-49-50	} D-101-C 1	D-23 1	701	W-64-C 1 W-65 4	Jordan.	the Of-E hours of	
Cadillac.	D 10 0	D 11 1 0	Elcar.	D in a state of		B-9 2	Lightner
57	D-13 2	D-14 2	4	D-45 2	9.01 0	B-9-C 1 B-10	4
•	D-20 1		6	D-45-C 1 D-49 2	King.		
Case.	*** ** *		Economy.		F	B-9 2	
U	W-64 2		6-46	D-45 2	State of the State	B-9-C 1 B-10	4
	W-64-C 1	W-62 4		D-45-C 1 D-49 2	Kissel Kar.		
Chalmers.			Elgin.		1 371.77	R-6 2	
	E-9 2		Series H	W-10 3 W-6 · 4		R-6-C 1 R-18	4
	E-9-C 1	E-10 4	A CONTRACTOR OF THE PARTY OF TH	11-10 5 W-0 4	Laurel.		
Chandler.		-	Essex.	001	T. BU BACT'	D-59 2 D-58	2
	W-64 2		A	D-4 2	Lexington.		
	W-64-C 1	W-65 4	-	D-4-C 1 D-11 4	R-19	W-64 2	
Chevrolet.			Fiat.	*** *** ***		W-64-C 1 W-65	4
	F.4 9			W-54 2 W-55 4	Liberty		TINE D

A-38

L-30 2 L-30-C 1 L-31

Ford.

Liberty

F. R. P. 45

Franklin.

E-2

G-23

G-25

2 1 . D-104

G-19 G-24-C G-19

D-28 D-20

213

Cleveland.

Cole Aero.

Early

Late

870

(M-G)D-43 D-43-C

2 A-39

Liberty.

Locomobile. 38, 48

Madison.

10-B

2

2

D-28 D-20

W-64 W-64-C

R-16 R-16-C

D-104

W-62

R-18

<sup>(</sup>M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166. \*Indicates Pair.

Car and Model   Code No. No.   Req.   No. No.   No.	2 4 4 4 4
Model         Code No.         No.         Req.         No.         Red.         No.         Rodel No.         No.         Red.	2 4 4 4 4
Marmon.  34 B-3 2 B-17 4 Oakland.  Maxwell.  (M-G) S-1 6 E-9 2 S-2-C 1 S-3 4 Olympian.  McFarlan.  W-10 3 W-6 4 D-28 2 D-20 1 D-104 4 N-22 2 N-22 C 1 N-23  N-22 2 N-22 2 N-20 1 D-104 4 Roamer.  6-54 B-9 2 B-9-C 1 B-10  Saxon.  W-10 3 W-6  N-22 2 N-22 1 N-23  Roamer.  6-54 B-9 2 B-9-C 1 B-10  Saxon.  W-10 3 W-6  D-28 2 D-20 1 D-104  Saxon.  W-10 3 W-6  D-28 2 D-20 1 D-104  Scripps-Booth.	4 4
Marmon. 34 B-3 2 B-17 4 Oakland. 34-B R-16 2 R-16-C 1 R-18 4 Saxon. W-10 3 W-6 E-9 2 S-2-C 1 S-3 4 Olympian. McFarlan.	4 4
Maxwell.  B-3 2 B-17 4 Oakland. 34-B R-16 2 R-16-C 1 R-18 4 B-9-C 1 B-10    Comparison of Comparison	4 4
Maxwell.  (M-G) S-1 6  E-9 2  E-9-C 1 E-10 4  Late S-2 2  S-2-C 1 S-3 4  McFarlan.  (M-G) S-1 6  R-16-C 1 R-18 4  Saxon.  R-16-C 1 R-18 4  Saxon.  W-10 3 W-6  Sayers. 6 D-28 2  D-20 1 D-104  Scripps-Booth.	4 4
E-9 2 Oldsmobile. Saxon.  E-9-C 1 E-10 4 45-A R-16 2 Sayers. S-2 2 S-2-C 1 S-3 4 Olympian.  McFarlan.  Saxon. W-10 3 W-6  Sayers. 6 D-28 2 D-20 1 D-104	4
Late S-2 2 37 Early R-16-C 1 R-18 4 6 D-28 2 Olympian.  McFarlan.  McFarlan.  S-2 2 0 0lympian.  E-4 2 Scripps-Booth.	4
S-2-C 1 S-3 4 Olympian. D-20 1 D-104 McFarlan. E-4 2 Scripps-Booth.	4
W-64-C 1 W-62 4 Late E-9 2 R-16-C 1 R-18	. 4
Mercer. E-9-C 1 E-10 4 Seneca. (M-G) A-2-	
W-64-C 1 W-62 4 90 E-4 2 Standard.	
D-28 2 4 E-9 2 W-64-C 1 W-55	- 4
D-20 1 D-104 4 E-9-C 1 E-10 4 Stearns.	
Mitchell. P. 16 2 2-25 3.35 B-3 2 B-1 4 R-16-C 1 R-18	4
R-16-C 1 R-18 4 Paige. W-64-C 1 W-65	4
Moline-Knight. L, G W-5 3 E-1 4 6-55 R-16 2 Stephens. R-16-C 1 R-18 4 74-76 D-28 2	
Monitor. 6-39 G-22 3 G-25 4 D-20 1 D-104	4
M. & O D-45 2 Paterson. Studebaker. W-5 3 W-6	1
Moon. D-20 1 D-104 4 Stutz.	PORT OF
6-36 W-10 3 W-6 4 Peerless. 6-66 D-28 2 G R-1-T 2 R-17 E-4 2 Templar.	31 35 3
D-20 1 D-104 4 E-7 1 E-2 4 445 R-16 2	BERRY A
Moore. 30-C E-4 2 Phianns. R-21 2 R-22 4 R-16-C 1 R-18 B-9 2	4
E-7 1 E-2 4 Piedmont. B-9-C 1 B-10	4
E-9-C 1 E-10 4 D-45-C 1 D-49 38, 39 R-6 2 R-15	2
Murray. Pennsylvania. R-6-C 1 R-15- W-64 2 D-45 2 Late B-9 2 B-10	r 2
W-64-C 1 W-55 4 D-45-C 1 D-49 22 _ B-9-C 1	ELWO
Napoleon.  D-45 2 Pierce-Arrow. Vernon. 149, 819 R-21 2 R-22	4
D-45-C 1 D-49 2 35-C-4, Westcott.	
Early D-28 2 66-A-4, W-54 2 W-62 4 S-18A D-28 2 D-20 1 D-104	4
D-20 1 D-104 4 Pilot. White.	2
Nash Truck. 0-45 D-28 2 L-3-C 1	tewars:
E-9 2 Willys-Knight. E-0 C 1 E-10 4 Premier. 88-4 E-1	4
National 6-C D-28 2 84 E-3 2 E-1	4
B-9-C 1 B-15 4 Reo. Late E-9 2	A) TUB
6 cyl. B-9 2 R-16 2 E-9-C 1 E-10	4
Nelson. N-22 2 B-6 2 B-11-	2 2
4-29 (M-G) U-5 8 N-22-C 1 N-23 2 B-11-	2

<sup>\*</sup>Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For List Prices, see Pages 165-166.

### BRUSH SPECIFICATIONS FOR 1920 AUTOMOBILES.

	Genera	tor	Mot	or		Gener	ator	Mot	or		Gener	ator	Mot	tor
Model Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Acme Tr B & F Allen.	uck. G-26	3	G-25	4	Chevrolet 4-90, FB	R-16 R-16C	2	R-30 R-30-T	2 2	Ferris.	L-7 L-3-C	2	L-5	2
43	E-9 E-9-C	2	E-10	4	Cleveland	∫ E-4 E-7	2	E-2	2	Fiat. 501 505	W-54 A-60	2 2	W-55 A-61	4 4
Late 43 Alsace.	W-64-C	1 .	W-66	4	40 Cole.	G-26	3	G-25	4	Ford.	A-60-C	1		
American	D-45 D-45-C	1	D-49	2	8-70, etc.	D-28 D-20	1	D-104	4	T	L-30 L-30-C F-2	2 1 2	L-31	4
В	W-64 W-64-C	2	W-65	4	35 Columbia Series 20	E-9	(M-G)	A-2-T	4	F. R. P.	F-2-C A-38	1 2	F-1 A-39	2
Anderson 7-R 5-R	R-16-C	2	R-30 R-30-T	2 2	Comet.	E-9-C	1	E-10 W-11	4	Franklin. 9-B		(M-G)		2
Apex Tr 1&11/2 To	on E-3	2	None	Street.	C-53 Commerc E, EP	W-14 e Truck. B-9	3 2	None	4	Gardner.	W-64	D	43-C	2
8-20, Ann sary		2		Sant I	Commons 4-40	B-9-C wealth. D-45	1 2			Geronimo	W-64-C	1	W-65	4
Atterbury		1	B-10	4	Corb Tru	D-45-C	1	D-49	2	Glide.	D-45 D-45-C	2	D-49	2
S-E Auburn.	D-28 D-20	1	None	Skuts S	A, B, C, E & AA Corliss T	∫ G-26	3	G-25	4		D-28 D-20	2	D-104	4
H,K,R,S W Motor H,K,R,S	R-16 R-16C R-31	2 1 3	R-18 R-30	4 2	Crow-Elk	hart. D-45	(M-G)	A-2-T	4	Grant Six HX	B-19 B-19-C	2	B-16	4
R Motor Austin.	}		R-30-7		Cunningh V-3	D-45-C	1 2	D-49	2	H Hal-Fur		3	W-8	4
12 Beggs.	D-28 D-20	1	D-104	4	Daniels.	W-64-C	1	W-55	4	Halladay.	W-64 W-64-C	1	W-65	4
6	E-9 E-9-C m Truck.	2	E-10	4	D Davis.	D-4 D-4-C	2	D-11	4	22 Harroun.	W-53-T	2	W-44 W-44-L	2 2
DG, EH, FJ		3	G-25	4	7-R Disbrow.	D-4-C	1	D-104	4	A-A-2	R-16 R-16-C	2 1	R-18	4
Biddle.	G-22 G-24-C	2 1	G-23	2	A Dixie-Fly	L-7 L-3-C	2	L-5	2	Harvard. 4-20 Hatfield.	W-10	3	W-6	4
Birch. Super 4	D-45 D-45-C	2	D-49	2	4-40	D-45 D-45-C	2	D-46	2	A-42.	D-45 D-45-C	2 1	D-49	2
Brewster.		(M-G)		8	Dispatch Dodge.	it i i	(M-G)	U-5	8	Haynes.	L-7 L-3-C	2	L-5	2
Briscoe. 4-34	E-9 E-9-C	2 1	E-10	4	Dorris.		(M-G)	N-22 N-22-C	2 1	H.C.S. Spe	cial. D-4	2		4
Buick. K-Series	D-6 D-101-C	2	D-8 D-23	1	6-80 Dort.	W-64 W-64-C	2	W-55	4	Hollier. 206-B	D-4-C W-64	. 2	D-104	98
Bush.	D-45 D-45-C	2	D-49	2	15	W-64 W-64-C	2	W-65	4	Holmes.	W-64-C	1	W-55	4
Cadillac. 59	D-12-C	3	D-11	4	Economy 6-46	E-9 E-9-C	2	E-10	4	Hudson. Series O	D-13	(M-G)	D-43	2
Carroll	B-9 B-9-C	2	B-10	4	Elcar. D, G, H,	K D-28	.2			Huffman.	D-20	1	D-14	2
Case. V	W-64	2			Elgin. K	D-20 W-14	3	D-104 W-6	4	W Hupmobil	D-45 D-45-C	1	D-49	2
Chalmers 35C, 35-B		1 2	W-55	4	Erie.	D-45 D-45-C	2	D-49	2	R	W-64 W-64-C	2	W-65	4
Champion	E-9-C	1	E-10	4	Essex. 5A, 6A	D-4	2			Jackson. 6-38	E-4 E-7	2	E-2	4
5-4 Chandler.		1	D-49	2	Fergus.	D-4-C B-9	2	D-11	4	Jones. 28	E-4	2		
	G-26 dicates Pa	3	G-25	4	r Generato	B-9-C	1 (S-C)—St	B-10	4		E-7	1	E-2	4

### BRUSH SPECIFICATIONS FOR 1920 AUTOMOBILES-Continued.

	Gener	ator	· Mot	tor	0	Gener	ator	Mot	or	Carand	Gene	rator	Mot	or
Model Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Model	Code No.	No. Req.	Code No.	No. Req.
Jordan					Nash.					R. & V. I			*****	
M	D-4	2	D 101		G-87	W-12 W-14	3	W-13 W-11	4	31, 51 Late	W-5 W-5	3 3	W-13 W-11	4
F	D-4-C B-9	1 2	D-104	4	Rate National.	W-14	9	W-11		Saxon.				
	B-9-C	1	B-10	4	В В						W-10	3	W-6	4
Kalamazo					Sextette	W-64	2	W-55	4	Sayers Six	D 00	2		
G, H, K,	D-45	2				W-64-C	1			Series C, I	D-20	1	D-104	4
Barrier St.	D-45-C	. 1	D-49	2	Nelson.		(M-G)	U-5	8	Scripps-Bo		200		
King.	337.04	. 0			Noma.		(M-G)	0.0		В	R-16	2	R-30	2
Н	W-64 W-64-C	2	W-65	4	1-B	D-28	2			Selden Tri	R-16-C	1	R-30-T	2
Kissel.	010			NI NO.		D-20	1	D-104	4	Seiden III	N-25	3	N-23	4
45	R-16	2	D 10		Norwalk.	D. 15	9			Seneca.				
Kline.	R-16-C	1	R-18	4	4-40	D-45 D-45-C	2	D-46	2	L		(M-G)	A-2-T	4
6-55-J	W-5	3	W-6	4	Oakland.	D-10-C	. 1	2 10		Skelton.	W-64	2		
			4		34-C	R-16	2	R-30-N		35	W-64-C	1	·W-65	4
Lafayette.	D-12-C	3	D-11	4		R-16-C	1	R-30-T	M 2	Standard.				
Laurel.	D-12-C	9	D-11	HAR.	Oldsmobil	e.				8	W-64	2	*** **	
35	D-59	2	D-58	2	37-B	R-16	2	R-30	2	I	W-64-C	1	W-65	4
Lexington						R-16-C	1	R-30-T	2	Stanley. Steamer.	R-16		None	
S	G-26	3	G-25	4	47-B	D-28 D-20	2	D-104	4	Steamer.	R-16-C			
Liberty.			*** 0		Olympian.			D-101	mioCl .	Stearns.	1			
10-A, B, C		3	W-6	4	45	E-4	2			L-4	W-64	2	W-65	4
Locomobil	W-64	9				E-2	1	E-2	4	Stephens.	W-64-C	1	W-00	-4
Series 5	W-64-C	2	W-44	4	Oneida Tr Series 9	W-64	2	None		Series 84	E-9	2		
Mack Tru		-			Series a	W-64-C	ī	rione			E-9-C	1	E-10	4
	L-7	2	in the	Frank	Overland.					Stephens-		100	W-65	4
Maibohm.	L-3-C	1	L-5	2	4	E-9	2	T 10		Stewart T	W-64	4	W-05	1
B B	B-19	2				E-9-C	1	E-10	4	34 & 1 Ton		2		
	B-19-C	1	B-16	4	Owen Mag W-42	O-1	6	0-2	4		E-30-C	1	D-49	2
Marmon.					W-42	0-1	0	0-3	4	Studebake			W.C	4
6-34	D 100	0	D-104	4	Packard.					(Horizont	W-5	3	W-6	-1
Marsh "F	D-12-C	3	D-104	4	325, 335	B-3	2	B-10	4	Generator		3	W-6	4
madi I	W-67	2			Paige.	0.00		0.05		Stutz.				
1-	W-67-C	1	W-65	4	6-42, 6-55	G-26	3	G-25	4	Series H	R-1-T	2	D 17	4
Marshall.		0			Paterson.	D-28	2			Templar.	R-13-C	1	R-17	1
K	D-45 D-45-C	2	D-49	2	6-47	D-20	ĩ	D-104	4	A-4-45				
Maxwell.	D-45-C		10-10	odoff	Peerless.					(Early)	B-9	2		
25	S-2	2			Series 6	E-4	2	12.0	4		B-9-C	1	B-10	4
Truck	S-2-C	1	S-3	4	Donney	E-7	1	E-2	4	(Late)	B-19 B-19-C	1	B-10	4
}	E-9 E-9-C	2	E-10	4	Pennsy. 18	D-45	2			Tulsa.	D-13-C	1000	210	
201	17-9-0	(M-G)		4	10	D-45-C	1	D-49	2	D-1 & D-2		2		
			S-1-C	1	Pierce-Arr			W 44	shill (		D-45-C	1	D-49	2
McFarlan					31, 51	W-64	4	W-44	4	Velie.	B-9	2		
127	W-64 W-64-C	2	W-62	4	Pilot.	D-28	2			6-48	B-9-C	1	B-10	4
Mercer.	W-04-C	1	W-02	1	6-45	D-28 D-20	1	D-104	4	Late 6-48	B-19	2		
Series 5	W-64	2			Premier.						B-19-C	1	B-10	4
The state of the s	W-64-C	1	W-44	4	D	D-28	2		has U	6-34	W-64	2	W-65	4
Metz.	Wes	0			2	D-20	1	D-104	4	Vernon.	W-64-C	1	11-05	4
Six	W-64 W-64-C	2	W-65	4	Rainier Tr	E-30	2			4-20		(M-G)	W-26	4
Mitchell.	11-01-0	1	11-00			E-30-C	ī	D-49	2	8-20	R-21	2	R-22	4
F-40	R-16	2	R-30	2	Reo.				in the Land	Westcott.		9		
Monitor.	R-16-C	1	R-30-7	r 2	T-6. U-6	N-25	3	N-23	4	C-48	D-4-C	2	D-104	4
Monitor.	D-45	2			F (Speed Wagon)	R-16	2	R-30-N	1 2	White Tru				-
	D-45-C	1	D-49	2	wagon)	R-16-C	, 1	R-30-7		(Few)	L-10	3	None	
Monroe.			1		Revere.					Willys Kn		0		
	E-4	2	73.0	Survey S	C	W-64	2	W	13.3	Series 20	E-9-C	1	E.	10 4
Moon.	E-7	1	E-2	4	Deserve	W-64-C	1	W-44	4	Winton.	2.3.0		15.1	
G-48 )	D-4	2			Roamer. C-6-54.					25	B-6	2	B-11-L	
G-68	D-4-C	1	D-104	4	(Early)	B-9	2		Beeng				B-11-R	.H. 2
Moore.						B-9-C	1	B-10	4	Wolverine	В-9	2		
60	E-4	2	-	STATE OF THE PARTY.	(Late)	W-64	1	W-55	4		B-9-C	ĩ	B-10	4
	E-7	1	. E-2	4	r Generator.	W-64-C				For Pr			-	-

### BRUSH SPECIFICATIONS FOR 1921 AUTOMOBILES.

	Genera	tor	Mot	or		Gener	rator	Mot	or	Torn Mary	Gener	ator	Mot	or
Model Model	Code No.	No. Req.	Code No.	No.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Ace.		-	NAME OF		Case.				Harry .	Elcar.		1.0		
G, L	E-9 E-9-C	2 1	E-10	4	5	W-64 W-64-C	2 1	W-65	4	B-4 D-6	) D-4 ) D-4-C	2	D-104	4
Acme Tr			0.00		Chalmers.	E-9	2	E-10	4	Elgin.				
Allen.	G-26 W-67	3 2	G-25 W-66	4	35-B, C Champion	E-9-C	1			K Erie.	W-64 W-64-C	1	W-65	dala.4
Akron M	W-67-C Iulti Truck		Wer	4	C-4 Chandler.	D-45 D-45-C	1	D-46	2	Bile.	D-45 D-45-C	2	D-46	2
	W-64 W-64-C	1	W-65	Sedden	Early	G-26	3	G-25	4	Essex. Early.	D-4	2	D-11	19281/4
Ambassa		1			Late	B-71 B-71-C	2	B-72	4		D-4-C	1		
	W-64 W-64-C	2	W-65	4	Chevrolet.		67 (5)	1		Late	B-71 B-71-C	2	B-72	
American	n.			Skelte	F, B 4-90	} E-4 E-7	2	E-2	4	FERGUS	11 15		D 10	
C, D, G		3	G-25	4	Cleveland		*				B-19 B-19-C	2	B-10	aley
Anderson S-30	n. R-31	3	R-30	2	Early	G-26	3	G-25	4	FERRIS.				
			R-30-	Γ 2	Late	B-71 B-71-C	2	B-72	EbiC4	C-20	L-7 L-3-C	2	L-5	2
Apperso:	n. B-19	2	B-10	1	Cole.			D 101		FREMO				
A T-	B-19-C	1			8-70	D-28 D-20	2	D-104	4	6	B-19	2	B-16	San Car
Apex Tr	E-3	2	None		Columbia			reio	Olym	Ford.	B-19-C	1,		
Argonne			W 07		C	E-9 E-9-C	2	E-10	4	T T	L-30	2	L-31	none
D	W-64 W-64-C	2	W-65	4	Comet.			la Truci			L-30-C	.1		
Atterbu	ry Truck.	-			6-C-53	W-16 W-15	2	W-11	4		F-2 F-2-C	1	F-1	planty.
	D-28 D-20	2	None		Commony		•			Franklin.		*/210		
Auburn.					45	D-45	2	D-46	2	Early		*(M.G	D-43-C	odu.
6-39 H & K 5	R-31	3	R-30 R-30-	r 2	Crawford. 21, 6, 40	D-45-C W-64	2	W-55	94	Late			N-26-C	:
Austin. 12	D4	2	D-104	4	Crow Elki	W-64-C	1		Pack	Friend. 9-B.	D-45	2	D-46	15.5
Avery T	D-4-C	1			L-65	( D-45	2	D-46	2	Gardner.	D-45-C	1		
1 Ton	W-64	2	W-65	4	S-65 Cunningh	J D-45-C	1			G	W-67	2	W-66	
Beggs.	W-64-C	1			V	D-12-C	3	D-104	4	Geronimo	W-67-C	1		
6	E-9	2	E-10	Fempl	Daniels.					Octomino	D-45	2	D-46	
Bell.	E-9-C	1			D	D-4 D-4-C	2	D-11	d d	Globe.	D-45-C	1		
18	E-9	2	E-10	1	Davis.		. 100			B-10	D-4	2	D-104	
Bethlehe	E-9-C em Truck.	1			51	D-4 D-4-C	2	D-104	4	0	D-4-C	-1		
	G-26	3	G-25	4	Dispatch.		1			Grant. H, X	B-19	2	B-16	
Biddle. B-1	G-26	3	G-25	4	G		(M.G.	U-5	8		B-19-C	1		
Birch.	0.20		0-20	MULTIN	Dixie Fly H-S 70	D-45	2	D-46	2	G. M. C. T			D 20	
15-5 &	D45	2	D-46	2		D-45-C	1	10-10	Jellet.	1 ton K-1 2-3½-5 to		3	R-30 R-30-T	
6 cyl. S	D45-C	(M.G.	) A-2-T		Dodge.		*(M.C	.) N-22	9				.7	
Brewster	r.						(31, 0	N-22-C	2	Handley	E-9	2	E-10	esite.
91		(M.G.	U-5	8	Dorris. 6-80	W-64	9			77	E-9-C	1		
Briscoe.	E-9	2	E-10	Vernor.	0-80	W-64-C	2	W-65	ichsa	Hanson.	D-4	9 18	D-104	
	E-9-C	Ĩ.	15-10	TO I	Dort.	0.00					D-4-C	ī		
Buick. Four	D-39	2	D-37	on beating	Early Late	G-26 B-71	3 2	G-25 B-72	4	Harvard.	D-45	2	D-46	01.
- our	D-39-C	1	D-38	1		B-71-C	1	1	187		D-45-C	1	310	11003
Big 6	D-6 D-101-C	2	D-8	1	DuPont.	W-64	2	W-65	4	Hatfield. A, 42	D-45	9 64	D-46	
Bush.	D-101-C	1	D-23	1	16100	W-64-C	ī	11-00		1, 12	D-45-C	1		Louro
	D-45	2	D-46	2	B-Straight		3	D-104	4	Haynes.	2	1		
Cadillac.	D-45-C	1			Motor				4	Early 55,	75 L-7 L-3-C	2	L-5	-
61	D-13	2	D-14	2	8 V-type Motor		2	W-44	4	Late 55, 7	5 L-12		L-13	1884
Carroll.	D-20	1			Economy	5 W-64-C	1			Hollier.	L-12-C	1,		
-C	B-19	2	B-10	4	V	E-9	2	E-10	4	206-B	W-64	2	W-65	220
	B-19-C	1	and the same		1	E-9-C	1	30		1	W-64-C	1 -	7 1	

\*Indicates Pair. (M-G)-Motor Generator. (S-C)-Switch Control. For Prices, see Pages 165-166.

BRUSH SPECIFICATIONS FOR 1921 AUTOMOBILES-Continued.

	Gener	ator	Mot	tor		Gener	rator	Mot	tor		Gener	ator	Mot	tor
Car and Model	Code	No.	Code	No.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
- No.	No.	Req.	No.	Req.	1000	No.	Req.	140.	Keq.	T	110.	Key.	110.	req.
Holmes.		(M.G.)	D-43	2	Maxwell.	S-2	2	S-3	4	Truck Economy			A NO.	546 S
H. C. S.		- 41	D-43-C	2	MaFarlan	S-2-C	1		13/38	Model	E-4 E-7	2	E-10	4
11. 0. 5.	D-4	2	D-104	4	McFarlan 145, 147	W-64	2	W-44	4	Olympian.				
Hudson.	D-4-C	1			Mercer.	W-64-C	1				D-45 D-45-C	2	D-46	2
Early	D-13 D-20	2	D-14	4	Series-5	W-64 W-64-C	2	W-44	4	Overland.		0	T2 10	
Late	B-71 B-71-C	2	B-72	4	Mercedes.		7 304	D =0			E-9-C	1	E-10	4
Huffman			D 40	-		B-71 B-71-C	2	B-72	4	Packard.	A-62	2	A-63	4
	D-45 D-45-C	2	D-48	2	Meteor.	W CA	9	W-44	4	6.72	A-62-C	1		
Hupmob R	ile. W-64	2	W-66	4	R	W-64 W-64-C	1	W-44	mil.	12 Truck	B-3 B-7	2 2	B-10	4
	W-64-C	ĩ	00		Metz. M-6	G-26	3	G-25	4	Daine	B-7-C	1	B-10	4
Jackson. 6-38	E-9	2	E-10	4	Mitchell.				mel	Paige. 6-42   Earl	y R-31	3	G-25	4
Jones.	E-9-C	1			F-40, 42	R-31	3	R-30-N R-30-T	and the same of the same of	6-66 } Late	R-31	3	R-35-T R-35	2 2
B-28	E-9 E-9-C	2	E-10	4	Monitor.	D.45	0	D-46	2	Paragon.	0.00	2	0-21	2
Jordon.	D-4	2	D-104	4	Series-3	D-45 D-45-C	2	D-40	2	412	O-20 O-20-C	1	O-21 O-22	2
F, M	D-4-C	1	D-104	4	Merit.	B-19	2	B-10	4	Parenti.	B-19	2	B-10	4
Kenwort 4-6	W-64	2	W-65	4	Moller.	B-19-C	1		10.7		B-19-C	1	210	anal?
8	W-64-C L-7	1 2	L-5	2	A	B-71	. 1	B-72	4	Pan Amer	W-64	2	W-55	4
	L-3-C	1	7	10	Monroe.	B-71-C	. 1		22.2		W-64-C	1		
King. H	W-64	2	W-65	4		E-4 E-7	2	E-2	4	Patterson. 6-50	D-4	2	D-104	4
Kissel.	W-64-C	1			Moon.	D-4	2	D-104	4		D-4-C	1		
D, B-6	R-16-C	2	R-18	4	6-48	D-4-C	1		BRITE !	Peerless. Series 7	E-4	2	E-2	4
Kline K	ar.		W.C		6-68	D-4 D-4-C	2	D-11	4		E-7	1		
6-55 Kurtz.	W-5	3	W-6	4	Napoleon.	G-26	3	G-25	4	Piedmont. 4-30	D-45	2	D-46	2
	W-64 W-64-C	2	W-65	4	9, 11 Nash.	G-20				6-40	D-45-C R-31	1 3	R-30	2
Lafayett	e.			BILES.	681	W-16 W-15	2	W-11	0394	H-SUME	1001		R-30-T	
134 Leach.	D-12-C	3	D-11	4	Late	D-28 D-20	2	D-11	4	Pierce Ar	D-12-C	3	D-11	4
20, A, B,		2	D-11	4	Truck	E-9	2	E-10	4	Pilot.	2			
Lexingto		1	0.00		National.	E-9-C	1		1	6-45	B-19 B-19-C	2	B-10	4
ST Liberty.	G-26	3	G-25	line 4	Sextette BB	W-64 W-64-C	2	W-55	4	Premier.				
10, C	W-16	2	W-6	4	Nelson.	11.01-0	la fan	C. I.	TO I	6-D	D-4 D-4-C	2	B-104	4
Lincoln.	W-15	1			D Noma.		(M.G.)	U-5	8	Ranger.		1 1	710 70	T.
Locomot	D-12-C	3	D-11	4	1-C	D-4	2	D-104	4	В	B-19 B-19-C	2	B-10	4
48-VII	W-64	2	W-44	4	Norwalk.	D-4-C	1	U Table &		Reo.				
Luverne	W-64-C Truck.	1			4-30 KS	D-45 D-45-C	2	D-46	2	T-6 T-6 (late	N-27	3 2	N-23 N-23	4 4
AL	E-9 E-9-C	2	E-10	Inval4	Oakland.			D 20.3		Models)	N-27-C	ī	True	nel i
Lorraine			Wes	election !	34-C	R-31	3	R-30-N R-30-T		Speed Wagon	R-16	2	R-30-N	
The same of	W-64 W-64-C	1	W-65	4	Ogren. 6-6	B-71	2	B-72	4	Revere.	R-16-C	1	R-30-T	M 2
Maibohr B.	n. B-19	2	B-16	4	Oldsmobil	B-71-C	1		. 8.	B Revere.	W-64	2	W-44	4
Marmon	B-19-C	ī	10	Luri L	37 A	R-31	3	R-30-N		Roamer.	W-64-C	1		
34	D-12-C	3	D-11	4	43 A	E-4	2	R-30-T E-2	M 2	D-4-75	B-19	2	B-10	4
Marshal	D-45	2	D-46	2	46 A	E-7 D-4	$\frac{1}{2}$ 1	D-104	4	C-6-75	B-19-C W-64	1 2	W-44	4
	D-45-C	1	10-10	-		D-4-C	1				W-64-C	1		

### BRUSH SPECIFICATIONS FOR 1921 AUTOMOBILES-Continued.

Car and	Genera	ator	Mote	or		Gener	ator	Mot	or		Gener	ator	Mot	or
Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
R. & V. K	night.				Stearns.					Tulsa.	HI LOD			
1. R.	W-5	3	W-11	4	SK-L4	W-64	2	W-65	4	E-1, 2, 3	D-45	2	D-46	2
Saxon Du	uplex.					W-64-C	1				D-45-C	1		
25-D-T	1				Sterling 1					Twin Cit				
Early	1 W-5	3	W-11	4		W-64	2	W-44	4	2.31/2 Ton			None	
Late	W-16	3	W-6	4		W-64-C	1				E-30-C			
	W-15	2	W-6	4	Stephens.					Velie.				
		1			86-90	E-9	2	E-10	4	30	W-64	2	W-65	4
Sayers.	40.00					E-9-C	1				W-64-C	. 1		
	D-4	2	D-104	4	Stevens 1	Duryea.				48	B-19	2	B-10	4
	D4-C	1				W-64	2	W-44	4		B-19-C	1		
Scripps E						W-64-C	1			Victory.				
B-39	R-16	2	R-30	2	Studebak	er.				V	A-62	2	A-63	· 4
	R-16-C	1	R-30-T	2	Early	W-16	2	W-6	4		A-62-C	1		
Seneca.						W-15	1		272.00					
L		(M.G.)	A-2-T	4	Remy Sy	s-	3	R-30-N	1 2	Westcott.				
Sheridan					tem	R-31		R-30-T		C-38	D-4	2		
1,8	E-4	2	E-2	4	Wagner	W-16	2	W-6	4	C-06	D-4-C	ĩ	D-11	4
	E-7	1			System	W-15	1			Whaten				
Shaw.					Late	R-31	3	R-35	2	Wharton.	D-45	2	D-46	- 9
	W-64	2	W-44	4	Light Six			R-35-T	2		D-45 D-45-C	1	D-40	-
-	W-64-C	1			Spec. Six	W-16	2	W-11	4	*******				
Severn.					Big Six	W-15	1			Wills Sain				
6	W-16	2	W-6	4	Stutz.						D-12-C	3	D-11	- 1
~ .	W-15	1			H (16)					Willys K	night.			
Skelton.					Valve	R-1T	2	R-30-N	1 2	20	E-9	2	E-10	1
35	W-64	2	W-65	4		R-13-C	1	R-30-T			E-9-C	4		
	W-64-C	1			Templar.				-	Winthers	Six.			
Standard					4-45	H-19	2	B-10		61	W-64	2	W-65	4
1	W-64	2	W-65	4	1-10	B-19-C	1	D-10	4	Truck 75	W-64-C	1		
Cambra	W-64-C	1			Texas.	D-13-C	1			Winter				
Stanley	Steamer.	0			A. B	B-19	2	B-10	4	Winton.	D.C	0 .	D 11 I	TT 0
	R-16 R-16-C	2	None		А, Б	B-19-C	1	D-10	3/00/3	33	B-6	2	B-11-L B-11-R	
Ctanwaa		1			m'. m		1						B-11-R	-F1 2
Stanwoo A-20	W-64	6	W 0-	-	Titan Tr					Wolverine		123		
A-20	W-64-C	2	W-65	4		W-64	2	None			B-9	2	B-10	4
	W-04-C	1				W-64-C	1				B-9-C	1		

### BRUSH SPECIFICATIONS FOR 1922 AUTOMOBILES.

Ace.					Bell.					Chalmers.				
L-F-C	E-9	2	E-10	4	4-32	E-9	2	E-10	4	35-C	E-9	2	E-10	4
	E-9-C	1				E-9-C	1		- 6		E-9-C	ī	1, 10	
Allen.					B-1, 5	G-26	3	G-25	4		1,00			
13	W-68	2	W-66	4				-		Chandler.				
	W-68-C	1			Birch.				HALL !	Six	( B-71	2		
mbassad	iore.				4, 8 Large		(M.G.)	A-2-T	4	Early-'22	B-71-C	1	B-72	4
R	N-27	2	N-23	4	6-Light, 4		2	D-46	4	Late-1922	B-73	2	B-72	4
	N-27-C	1		-01	Super	J D-45-C	1				B-73-C	1		
Anderson		-			Buick.				STATE OF	Champalat				
	R-31	3	R-30-M	2		D-39	2	D-37		Chevrolet.			***	
	1001		R-30-T M	2	34 to 37		-		1	490, FB	E-4	2	E-2	4
Apperson			1000-1 111	-	T:-1.0	D-39-C	1	D-38		Early-'22	5 E-7	1		
0	B-19	2	B-10	4	Light 6	D-6	2	D-8	1	Late-1922	R-31	3	R-35	2
10	B-19-C	1	D-10	4	45-47	D-101-C	1	D-23	1				R-35-T	2
		1			48 to 50	}				Cleveland.				
Atterbury					0.411					40	B-71	0	D 70	
	D-28	2	None		Cadillac.	-						2	B-72	.1
	D-20	1			61	D-13	2	D-14	2	Early-'22	B-71-C	1		
Auburn.			4			D-20	1			Late-1922	B-73	2	B-72	4
5-51	R-31	3	R-25	2	Carroll.				0.0		B-73-C	1		
			R-35-T	2	6	B-19	2	B-10	4	Climber				
Avery Tr	uck.	, 73.00				B-19-C	1			Climber S				
-Ton	W-64	2	W-65	4	Case.					4 and 6	W-64	2	W-65	4
	W-64-C	1			X	B-19	2	B-10	4		W-64-C	1		
Bay State						B-19-C	1	-	2 13	Cole.				
, otat	D-4	2	D-104-M	4	V	W-64	2	W-65	4	890	D-28	2	D-104-M	1
	D-4-C	1	Al .			W-64-C	1	., 00		000	D-20	-	D-104-M	1

BRUSH SPECIFICATIONS FOR 1922 AUTOMOBILES-Continued.

	Genera	ator	Mot	tor	1	Gener	rator	Mot	or		Gener	ator	Mot	or
Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Columbia 6, Chal- lenge	E-9	2	E-10	4	Elgin. K-1	W-64 W-64-C	2	W-65	4	H C S Series 3	D-4 D-4-C	2 1	D-104-1	M 4
Comet. C-53	E-9-C W-16 W-15	2 1	W-11	1	Engol Tr	w-64 W-64-C	2	W-65	4	Hudson. Super 6 Early Late	B-71 B-71-C B-73	2 1 2	B-72 B-72	4
Common 44	D-45 D-45-C	2	D-46	4 and a state of	Early Late	B-71 B-71-C B-73 B-73-C	2 1 2 1	B-77 B-72	4	Huffman. R	D-45 D-45-C	1 2 1	D-46	4
Cook Tr 2½ Ton Corinthia	W 64 W-64-C	2	None		Fergus. S-5-21	B-19 B-19-C	2	B-10	4	Hupmobil Series R		2 1 2	W-66 E-10	4
Early-192 Crawford	2 B-71 B-71-C	2	B-72	slasse.	Ferris. 60, 70 Ford.	L-12 L-12-C	2	L-13	4	1 Ton	E-9-C	(M.G.)		2
22-6-40 Crow Ell	W-64 W-64-C khart.	2 1 2	W-55	4	T . 0	L-30 L-30-C F-2 F-2-C	2 1 2 1	L-31 F-1	4	Jackson. 638	E-9 E-9-C	2	E-10	4
L-63-55 S-63-65 Cunningl	) D-45-C	1 2	D-104		Franklin. 9-B		(M.G.)	N-26 N-26-C	2	Jordan.	R-31	3	R-35 R-35-T	
Daniels.	D-12-CX D-4		D-11	4	Friend.	W-16 W-15	2	W-11	4	MX, F Kelsey.	D-4 D-4-C B-71	2 1 2	D-104-1	M 4
Davis. 61, 67	D-4-C D-4 D-4-C	2	D-104	-M 4	Gardner. T	W-68 W-68-C	2	W166	4	6	B-71-C B-19 B-19-C	1 2 1	B-10	4
Dixie Fig.		2	D-46	. 4	Goodspee	D-45 D-45-C d.	1	D-46	4	6-80	W-64 W-64-C	2	W-44	4
Dodge.		(M.G)	N-22 N-22-0	2 1	Grant.	W-64 W-64-C B-19	2 1 2	W-65 B-16	4	Kissel. 45 Early Late	R-16 R-16-C R-31	2 1 3	R-18-M	2
Dorris. 6-80 Dort.	W-64 W-64-C	2	W-65	4	Hahn Tru	B-19-C ick. D-4	1 2	D-11	4	Kline Ka 6-55-K	r. W-5	3	R-35-T W-6	4
14, 19 Early Late	\ B-71 \ \ B-71-C \ B-73	1 2	B-72 B-72	4	FDFE Handley		2 1	W-10	4	Kurtz.	W-64 W-64-C	2 1	W-65	4
Driggs. D-1	B-73-C B-71 B-71-C	2	B-72	4	Hanson. 60	D-4 D-4-C	2	D-104-1		Lafayette. 134 Leach.	D-12-C D-12-CX	' 2 1	D-11	4
Du Pont	W-64 W-64-C	2 1	W-65	4	6-30 Hatfield.	E-9 E-9-C	1	E-10	4	999 Lexington		1	D-11	4
Duesenbe Straight	D-13 D-20	2	D-11	4	A-42 Haynes. 43, 55, 75	D-45 D-45-C L-12	2 1 2	D-46 L-13	4	ST-22 T-22 Liberty. 10-C Early	G-26	2	G-25 B-72	4
A-22 B-22	E-9 E-9-C E-9	2 1 2	E-2 E-10	4	Henney.	L-12-C B-71 B-71-C	2	B-74	4	Late	B-71-C B-73 B-73-C	1 2 1	B-72	4
Earl. 40	E-9-C E-9-C	2	E-10	4	Heifner.	B-71-C B-71-C	2 1	B-72	4	Lincoln.	D-12-CX	2	D-11	4
Economy		2	E-10	4	Hollier.	W-64 W-64-C	2	W-65	4	Locomobil 48 Maibohm.	W-64 W-64-C	2	W-44	4
Elcar. K-4, 7-R	D-4 D-4-C	2	D-104	M 1	Holmes. Series 4		(M.G.)	D-43 D-43-C	2 2	В	B-19 B-19-C	1	B-16	4

BRUSH SPECIFICATIONS FOR 1922 AUTOMOBILES-Concluded.

		-	В	RUSH	SPECIFIC	ATIONS	FOR 1	1922 AU	томо	BILES—Co	ncluded.			
Car and	Genera	tor	Mot	or	C1	Gener	ator	Mot	tor	0	Genera	tor	Mot	or
Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.	Car and Model	Code No.	No. Req.	Code No.	No. Req.
Marmon. 34 Marshall.	D-12-C D-12-CX	2 1	D-11	4	Oldsmobi 43-A	E-4 E-7 R-31	2 1 3	E-2 R-35	4 2	Sayers. DP Seneca.	D-4 D-4-C	2	D-104-	M 4
Maxwell.	D-45 D-45-C	2	D-46	4	47	D-28 D-20	2	R-35-T D-104-	2	L-12 50 427	} E-9-C	2 1 (M.G.)	E-10 A-2-T	4
Simms Huff Auto	S-2 S-2-C E-9	1 2	S-3 E-10	4	Overland 4 Packard.	E-9 E-9-C	2	E-10	4	Sheridan,	W-16 W-15	2	W-6	4
McFarlar TV	) E-9-C W-64	1 2	W-44	4	Twin Six Single Si	B-3 ix A-62 A-62-C	2 2 1	B-10 A-63	4 4	Skelton. Standard.	W-64 W-64-C	2 1	W-44	4
Mercer. Series-5	W-64-C W-64	2	W-41	4	Truck Paige. 6-44 6-66	B-3 R-31	3	B-10 R-35 R-35-T	2 2	11 Stanley S	W-64 W-64-C	2	W-65	4
Metropol M-41-61	B-71	2	B-72	4	Parenti.	B-19 B-19-C	2	B-10	. 4	Steamers.		2 1	None	Tar medical to
Meteor. 22-80	D-4 D-4-C	2 1	D-11	4	Paterson. 650		2	D-104-	M 4	SKL-4 Stephens.	E-9	2 1 2	W-63 E-10	4
Mitchell. F-50		3	R-35 R-35-7	r 2	Peerless. 56 Series 7 Piedmon	} E-4 E-7	2	E-10	4	Stevens I	E-9-C Duryea. W-64 W-64-C	1 ' 2 1	W-44	4
Monitor.	D-45 D-45-C	2 1	D-46	4	4-30 6-40	D-45 D-45-C R-31	. 1 3	D-46 R-35	4 2	Studebak Remy System	er.	3	R-35	unad u
Merit.	D-4 D-4-C	2	D-104	-M .4	Pierce A	D-12-C D-12-CX	2 1	D-11	4	Wagner System	} W-16	2	R-35-T W-11	2 2 4
Mogul.  Molkar.	W-64 W-64-C	2	W-65	4	Pilot. 6-45 6-50	) B-19 ) B-19-C	2 1	B-10	4	Stutz. K	W-15 R-1-T	2	R-33	. 2
Monroe.	B-71 B-71-C	2	B-72	4	Premier. 6 D Premocar	D-4 D-4-C	2	D-104-	M 4	Stewart 11 and 12	E-30	2	R-34 D-60	4
S-9-12 Moon.	E-9 E-9-C	2	E-10	4	6-40 Raleigh.	B-71 B-71-C	2 1	B-72	4	Templar. A-445	E-30-C B-19 B-19-C	1 2 1	B-10	4
6-40	D4 D4-C D4 D4-C	2 1 2 1	D-104 D-11	-M 4	Ranger. A-22-4	B-71 B-71-C	2 1 2	B-72	4	Texan. A-38 C-12	} B-19-C	2 1	B-10	4
Nash. 691	) D-28	2	D-11	4	A-22-6 Reo. T-6-B	∫ B-19-C N-27	1 2	B-16 N-23	4	Tulsa. E-1-4 F-1-6	D-45 D-45-C	2	D-46	4
41-4 National. Sextette	W-64	2	W-44	4	Rickenba	N-27-C acker. S-2 S-2-C	1 2 1	S-3	4	Velie. 6-34	W-64 W-64-C	2	W-65	4
Noma. 3-C	W-64-C D-4 D-4-C	2	D-104	I-M 4	Roamer. 6-54-E		2 1	B-10	. 4	Westcott. C-38	B-19 B-19-C D-4	2 1 2	B-10 D-104-1	M 4
6 Norwalk.	B-19 B-19-C	1 2 1	B-10	4	4-75 E R. & V. 4-R	W-64-C Knight. E-9	2 1 2	W-65 E-10	4	C-48	D-4-C D-4 D-4-C	1 2 1	D-11	4
530-KS Oakland.	D-45 D-45-C	2	D-46	4	6-J	E-9-C W-16 W-15	1 2 1	W-11	4	A-68	D-12-C D-12-CX	2 1	D-11	4
Oakland. 34-D 6-44 Ogren.	R-31	3	R-35 R-35-	T 2	Rotary. Six	B-71 B-71-C	2 1	B-72	4	Willys K	E-9 E-9-C	2 1	E-10	4
6-T	B-71 B-71-C	2	B-72	4	Saxon D	W-16 W-15	2 1	W-6	4	Winton.	B-6	2	B-11-L B-11R	H 2 H 2

<sup>\*</sup>Indicates Pair.

### PRICE LIST-STARTER AND GENERATOR BRUSHES

Management Navi Street				
Code Price	Code Price	Code Price	Code Price	Code Price
A-1-T\$1.20 each	B-70\$0.30 each	D-60\$1.25 each	G-41-C\$1.00 each	R-7-C\$0.25 each
A-2-T 1.50 "	В-7170 "	D-70 1.25 "	G-41-T 1.40 "	R-8-T 1.00 "
A-3 1.25 "	B-71-C60 "	D-71 2.00 "	G-4280 "	R-9 1.00 "
A-0 1.20		D-72 1.50 "	G-8030 "	R-10 1.50 "
A-0000	D-12 1.20	2 12 1.00		10 1.00
A-01 1.20	D-7300	D-72-L 1.75 "	Н-30-Т 1.80 "	10-11
A-32	B-73-C40 "	D-74 1.75 "	H-32-T 1.20 "	R-1280 "
A-3475 "	C-1 1.20 "	D-74-L 1.50 "	J-2 1.40 "	R-13-C25 "
A-3590 "	C-20 1.00 "	D-75 80 "		R-1465 "
A-3775 "		D-76 1.00 "	J-0 1.00	R-14-M75 "
	D-145 "	D-7770 "	J-4 1.50 "	R-14-T65 "
A-31-L00	D-245 "		J-5 2.00 "	
A-00	D-3	D-10 1.40	J-6 1.40 "	
A-39 1.25 "	D-4-C28 "	D-10 1.00	J-7 1.60 "	R-15 1.00 "
A-40 1.00 "		D-90 1.10 "		R-15-M 1.10 "
A-4175 "	D-4	D-91 1.40 "	K-120 "	R-15-T 1.00 "
A-4270 "	D-4-A10	D-101-C25 "	K-240 "	R-15-TM 1.10 "
A-4390 "	D-5 1.25 "	D-102-C25 "	K-320 "	R-1650 "
	D-625 "		K-450 "	
A-00 1.00	D-7 1.30 "	D-100 1.20		R-10-C00
A-60-C90 "	D-870 "	D-10100	K-590 "	K-17 1.20
A-61 1.10 "		D-104-M40 "	K-2040	K-1800
A-6280 "	D.900	E-150 "	K-3030 "	R-18-M75 "
A-62-C70 "	D-1050 "		K-3130 "	R-19 1.20 "
A-63 1.00 "	D-1150 "	17-200	K-3230 "	R-20 1.20 "
	D-1240 "	17-022	K-3330 "	R-21 1.00 "
A-100 1.40	D-12-C35 "	E-420 "		R-21 1.00
A-10110	D-12-CX35 "	E-535 "	1,-1 1.00	10.00
A-115 1.00 "	D-13 35 "	E-690 "	L-2 1.20 "	R-30-M60 "
		E-720 "	L-3 1.20 "	R-30-T50 "
D1 1.20	D-1410	E-7-X 20 "	L-3-C 60 "	R-30-TM60 "
B-1-C 1.10 "	D-1550 "	17-7420	L-5 1.35 "	R-3150 "
В-3 1.00 "	D-1620 "	17-1-17100		R-33 1.20 "
B-3-C 1.10 "	D-1760 "	E-870 "	L-6 1.00 "	
B-5 1.30 "	D-1880 "	E-940 "	1.1 1.00	10-01 1.00
В-6 1.35 "	D-1940 "	E-9-C40 "	1.0 1.20	10-00
B-6-C 1.10 "	D-2020 "	E-1065 "	L-1040 "	R-35-T75 "
D.O.C 1.10		E-2080 "	L-1180 "	R-22 40 each
D-1 1.20	D-20-A00	E-2170 "	L-12 1.00 "	S-160 "
D-1-C 1.20	D-2160 "	E-23 1.00 "	L-12-C 1.00 "	5-100
B-8 1.20 "	. D-22		L-13 1.35 "	5-1-000
B-8-C 1.10 "	D-2360 "	1.24 1.00	L-3030 "	5-200
B-9 1.20 "	D-24-C85 "	1720 1		5-2-000
B-9-C90 "	D-25-C90 "	E-26 2.00 "	L-30-C30	S-360 "
B-10 1.20 "	D-26-C80 "	E-27 1.50 "	1,-0102	S-4 1.25 "
B-11 1.25 "	D-2720 "	E-3080 "	L-5045 "	S-2080 "
B-12-C 1.00 "	D-2830 "	E-30-C70 "	L-50-C45 "	S-4020 "
B-13 1.20 "	D-2930 "	E-3160 "	M-1 1.00 "	S-4120 "
D-10 1.20		E-60 2.00 pair	M-290 "	
D-14-C/0	D-23-1V100	E-61 1.25 each		
D 10 1.00	D-50-C 1.00	E-62 2.00 pair	11-2000	S-7040 "
B-16 1.00 "	D-32 1.50 "		N-2130 "	S-8030 "
B-17 1.50 "	D-34 1.30 "	E-70 1.00 each	N-2240 "	U-1 1.75 "
B-17-T 2.00 "	D-3525 "	E-70-C90 "	N-22-C35 "	U-2 2.00 "
B-18 1.50 "	D-36 1.00 "	E-7520 "	N-23 1.00 "	U-3 2.00 "
B-18-S 1.40 "	D-3770 "	F-152 "	N-2455 "	0-0 2.00
B-1950 "	D-3870 "	F-230 "	N-2535 "	U-4 2.00
B-19-C 40 "	D-3930 "	F-2-C30 "		U-5 1.75 "
2 10 010	D-0000	F-10 1.00 "	14.2000	U-6 1.80 "
B-20 1.00 "	D-39-C 30	F-11 1.00 "	N-26-C75 "	U-8 1.00 "
B-21 1.10 "	D-40 1.20 "	1 11 1.00	N-2780 "	U-8-C90 "
B-22 1.00 "	D-41 1.30 "	1 00 1.20	N-27-C70 "	U-915 "
B-2390 "	D-42 1.30 "	F-31 1.10 "	N-50-T 1.50 "	U-1020 "
B-24 1.00 "	D-4390 "	G-1 1.50 pair	N-51-T 1.20 "	
B-25 1.00 "	D-43-C80 "	G-2 1.00 each	N-5240 "	
B-26 1.10 "	D-4480 "	G-3 1.30 "	N-6030 "	U-12 20 "
B-27 1.10 "	D-44-C80 "	G-4 1.20 "	14-0000	U-1325 "
D 20 1.10	D-11-C00	0 1 1.20	11-1000	U-3020 "
D 00	D-1010	00 1111111	N-80 2.00 "	V-10 1.25 "
B-2990 "	D-40-C40	G-6 1.75 "	O-1 1.40 "	V-11 1.00 "
B-3090 "	D-4650 "	G-7 2.50 pair	O-2 2.40 "	1-11 1.00
B-31 1.00 "	D-4750 "	G-9 80 each	0-3 2.40 "	V-12 1.00
B-32 1.25 "	D-48-C20 "	G-1080 "		W-170 "
B-33 1.00 "	D-49 1.00 "	G-1580 "	0-1 1.10	W-280 "
		G-17 1.40 "	0-20 1.20	W-380 "
~ 01 1.00	D-50 1.60 "	G 11 1.10	O-20-C 1.25 "	W-490 "
- 00 1.00	D'01 1.10	0-1000	O-21 1.50 "	
B-3780 "	D-52 1.00 "	0-1000	O-22 1.50 "	W-535 "
B-4020 "	D-53 1.50 "	G-2240 "		W-6 45 "
B-4170 "	D-54 1.75 "	G-22-C50 "	R-1-T 1.50 "	W-780 "
B-43 1.00 "	D-55 1.60 "	G-2360 "	R-2-T80 "	W-860 "
B-44 1.60 "	D-5680 "	G-24-C50 "	R-3 1.50 "	W-1030 "
		G-2545 "	R-430 "	W-1140 "
		G-2630 "	R-650 "	W-1230 "
- 00 1.00	D-01-C00	G-40-C 1.00 "	R-6-C45 "	W-1355 "
- 01 1.20	D-03 1.10	G-10-C 1.00	1000 ,	W-14 30 "
В-5530 "	D-59 1.00 "	G-40-T 1.20 "	R-725 "	W-1430 "

PRICE LIST-STARTER	AND	GENERATOR	BRUSHES-Continued.

506 P. C. In lots of \$25.00 or more, 501 and 107 P. C.

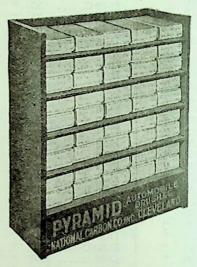
#### PYRAMID BRUSH ASSORTMENTS.



No. 20 Assortment.

Put up in neat display carton designed for counter, show case or window display. Seventeen different kinds of popular brushes, fifty brushes in all compose this assortment. On the back of the carton is found a list of the different automobiles on which each kind of brush is used. A conservative stock of popular selling brushes for the garage and dealer. Contains the following brushes:

4 D-6	2 D-20	8 E-7	6 L-30	3-N-22C
1 D-8	4 D-28	2 E-9	4 L-30C	4 W-5
1 D-23	4 E-2	1 E-9C	4 L-31	4 W-6
2 D-101C	4 E-4	4 G-26	6 N-22	2 W-15
		4 W-16		



No. 23 Assortment.

Container No. 132 is given free with No. 23 Assortment. It is of mahogany finish, and is an attractive addition to your fixtures. Forty different kinds of popular brushes. One hundred and ninety-nine in all compose this assortment. On the back of the container is found a specification label outlining the brushes contained in the assortment, as well as giving the automobiles on which each of the particular brushes are used. Contains the following brushes:

2 B-9	4 D-14	4 E-3	6 L-30C	6 S-1
1 B-9C	5 D-20	12 E-4	8 L-31	2 S-2
4 B-10	2 D-23	12 E-7	12 N-32	1 S-2C
2 B-19	4 D-28	4 E-9	6 N-22C	3 W-5
1 B-19C	4 D-39	2 E-9C	4 R-6	8 W-6
2 D-4	2 D-39C	4 E-10	2 R-6C	4 W-11
1 D4C	2 D-43	4 G-25	4 R-16	2 W-15
10 D-6	2 D-43C	3 G-26	2 R-16C	4 W-16
2 D-8	4 D-101C	2 L-7	4 R-18M	2 W-54
4 D-11	4 D-104M	1 L-3C	4 R-30TM	4 W-64
4 D-13	8 E-2 .	12 L-30	3 R-31	2 W-64C
		4 W-65		

### SIMPLEX THEFT PROOF AUTO LOCKS.

Ace

American

Anderson Auburn

Buick (6-cyl.)

Bour-Davis

Biddle

Briscoe

Cadillac

Cleveland

Columbia

Crawford

Commonwealth

Case Chandler

Cole

Comet

Davis

Dorris Douglas

Dupont

Fiat (6-cyl.)

Earl

Elgin

Elcar

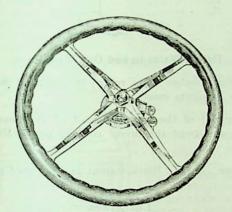
American Beauty



For Ford Cars, All Models.

All insurance companies will allow a reduction of 15 per cent in theft premium on cars with this equipment. Housing of heavy bronze, locking parts of case hardened steel. Eight tumbler Bell Lock. Attached by anyone in ten min-

Ford Mo	del. Pr	rice,	each	 	3501	\$7.00
Maxwell.	Price,	each		 	5346	8.00



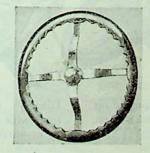
Lock and Wheel Combined.

Fits all Ford models; locks wheel rigid in straight ahead position; prevents steering and towing. Insurance companies will allow 15 per cent reduction in theft premium on cars with this equipment. Lock assembled into 17inch genuine walnut corrugated rim with specially designed aluminum spider. Lock housing of heavy bronze. Locking parts of case hardened steel. Eight tumbler Bell Lock attached in ten minutes. Guaranteed for life of car against wear, defect or looseness.

Price, each ......\$15.00

336 P. C. In lots of 12, 403 P. C.

### PLAIN STEERING WHEELS FOR FORD CARS.



Aluminum spider, corrugated rim, walnut finish, 17 inches diameter.

### For All Cars Except Ford.



Simplex Theftproof Auto Lock shown above is made in five sizes to fit every car, except Ford. Special model for Ford.

Attached to the steering post in 20 minutes-locks wheels rigid in straight ahead position-prevents steering - guaranteed for the life of the car.

Approved by Underwriters' Laboratories-endorsed by insurance agents-insurance companies everywhere allow 15 per cent re-duction in theft insurance pre-

miums on all cars equipped with Simplex Theftproof Auto Lock.

Price,	each			\$15.00
Price,	Doz.	Lots,	each	15.00

#### SIZE A-2"

Allen 1920	Mercer
Apperson	Moline-Knigh
Argonne	National
Cunningham	Marmon
Daniels	Martin-Wasp
Fergus	McFarlan
Fergus	McFarlan

### SIZE B-134"

SIZE C-15/8"

Dodge Metz

Allen (1918, 1919) Beggs Buick (4 cyl.) Chalmers Chevrolet Crow-Elkhart Dixie-Flyer Dort Durant Essex Gardner Grant

Dort (1918, 1919) Fiat (4 cyl.) Hupmobile (1918) Owen-Magnetic Packard "12" Pierce-Arrow 1921 ReVere Stutz Winton

Noma Olympian Overland (Model 83) Paige Pan-American Pilot Premier Rickenbacker Roamer R. & V. Knight Saxon Sayers Skelton Standard Stevens-Duryea Stephens Studebaker (6 cyl.) Stearns-Knight (1918, 1919) Templar Westcott Willys-Knight Winther Yale

Overland Four

### SIZE D-11/2"

Gray Harroun Hollier (1918, 1919) Hupmobile Jackson Jordan "M" Liberty Maibohm Maxwell (1922) Monitor Monroe (1918, 1919)

SIZE E-13/8

Moore Oakland Oldsmobile Packard "6" Paige (1920) Paterson Peerless Scripps-Booth Sheridan Stanley Steamer Studebaker 4 cyl. Velie White

Liberty (1918, 1919) Oakland (1918, 1919) Overland (Mod. 75 and 90) Franklin (Ser. 9)

### SUPERIOR LOCKING STEERING WHEELS.



For Ford Cars.

Are approved by the Underwriters Laboratories under the highest classification, and will positively prevent the theft of cars wherever installed.

These wheels have no sharp corners, protruding screws or bolts, but are compact, super-strong, and the neatest and cleanest cut wheels on the market. The rims are dish shaped of stout, tough and elastic hardwood, corrugated and finished in walnut. The spiders are of heavy die cast aluminum, highly polished.

The locking mechanism is embedded in one arm of the spider and comprises a large rectangular shaped hardened steel plunger, which engages with a steel hub keyed to the steering post. The plunger and recess in the hub are tapered in such a way, that the longer the wear the tighter and stronger the fit. The plunger is operated by a special four tumbler Yale lock with a one-inch oversize cylinder. When in a driving position, this plunger holds the wheel tight and will allow no side play. Superior Locking Steering Wheels positively stay in position while driving.

When the car is locked the wheel spins idly on two rows (upper and lower) of ball bearings, making control of the car impossible, and eliminating any chance of obtaining a leverage by friction or jamming. The use of two separate ball races is necessary as it is possible to drive a car, with the wheel in a spinning position, unless two races are employed. The key is removable only when the wheel is in a spinning position, the key therefore furnishing evidence, should the occasion arise, that the car was locked when left.

The installation of these wheels is exceedingly simple. Just remove the nut that retains the regular wheel, lift the wheel from the steering column, replace with the Superior Locking Steering Wheel and fasten with the special retaining nut which we furnish. No extra screws or pins are needed and no machining is necessary. The removal of our locking wheel is accomplished by unscrewing the retaining nut and lifting it from the steering column. This, however, can only be done when in possession of the key.

Special notice should be taken of the bell shaped attachment which we have incorporated, as a part of the lock. This covers the cap of the planetary gear box on the steering column and makes it impossible for a thief to unscrew the cap which would enable him to remove the wheel in a few seconds, and, replacing it with a standard wheel and cap, drive the car away.

Wheels are packed in individual fiber cartons, 12 to a case.

## NEVILLE MORE-ROOM STEERING WHEEL



Driver Walks in and Out With Ease.

Allows eight inches more room—in front of the driver's seat where it counts most.

Slides up out of the way. Instead of an almost impossible slide and twist the driver conveniently walks in and out of car.

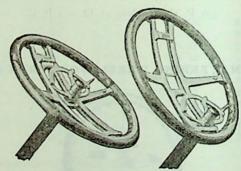
Handsome. Large. Black walnut and polished aluminum.

### List Prices.

17-in.	Neville	wheels	for F	ord ca	rs.		 	\$12.50
17-in.	Neville	wheels	other	makes	of	cars.	 	13.50
18-in.	Neville	wheels	other	makes	of	cars.	 	15.00

253-56 P. C. on orders for one to six wheels. 253-56 P. C. on orders for six to twelve wheels. 338 P. C. on orders for twelve or more wheels.

Neville wheels are packed one to a box, six boxes to the carton.



Standard equipment on many of America's finest Display stand given free with initial order of three or more.

Made for every make.

Specify year and make of car when ordering.

#### COTTON WASTE.



We suggest the use of No. 1 White, as it is practically free from dust, will absorb quantities of oil, and, being white to start with, it apparently stays clean a long time.

	100 lb.	50	lb.
	Bales,	Ba	les,
	Per lb.	Per	· lb.
No. 1. White Mohawk	156 \$0.20	182	\$0.24
No. 2. White Navaho	149 .19	178	.22
No. 1. Colored	142 .19	173	.22
No. 2. Colored Quana	145 .19	177	.22
White Auto Bak, 1 lb. cartons. P		.253	.40
Campbell's Motor Waste, 1/2 lb. cart	ons.		
Per carton		.166	.30

#### SUNBRIGHT POLISHING CLOTHS.



For Polishing
Automobiles,
House Furniture,
Office Furniture,
and
All Other Fine Surfaces

Sunbright Polishing Cloths, made of a fine grade of new cotton goods, are thoroughly washed to render them soft and absorbent, which is an essential necessity for good polishing.

They can be used with any kind of Automobile, Furniture or Metal Polish, without fear of scratching or marring.

The material has a good body, each cloth 36x18 inches,

makes a nice handful.

Will do the work of approximately three times as much ordinary cheesecloth.

Six Cloths in a Box.

Weight, per Dozen Boxes, 10 lbs.

No. S. P. C., per dozen boxes .....4003 \$6.00



### WIPING RAGS.

Sanitary rags of selected quality, thoroughly laundered and sterilized, free from grit, hooks, buttons, etc.

Used by garages, repair shops and industrial concerns for wiping and cleaning.

	STANDARD (	GRADES.	
U. S. Colored,	100-lb. Bales.	Per lb 121/21	\$0 20
U. S. Knit, 100	0-lb. Bales.	Per lb141/26	.22
U. S. All Whit	e, 100-lb. Bales.	Per lb 159	.24
U. S. Near WI	nite, 100 lb. Bales.	Per 15123/42	.21
In bales of	50 to 500 pounds.	Catch weights.	

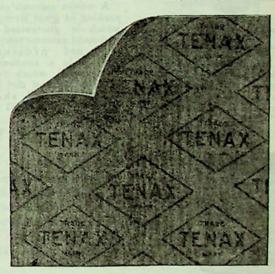
### VELLUMOID SHEET PACKING.

A very strong vegetable fiber, chemically treated, making it oil, water, gasoline, grease and air proof and exceedingly tough. An exceptional gasket for use on all oil, grease, water and gasoline connections.



	Thickness.	1 to 5 yds.	5 to 2	5 yds.
No. 3	015 1"	Per sq. yd. 634	542	\$0.90
No. 4	021"	Per sq. yd. 841	724	1.20
No. 5	032 12"	Per sq. yd. 1263	1089	1.80
No. 6	16"	Per sq. yd. 2107	1806	3.00

#### TENAX SHEET PACKING.



For low or high-pressure steam, super-heated steam, gas engines, ammonia, acids, oils, hot or cold water, etc. Very tough compressed fibre sheet. Will stand a temperature of 1200 degrees Fahrenheit and 250 pounds steam pressure. Will pack a joint perfectly. Sheets 50 inches x 50 inches.

Thickness of Sheets.	Approx. Weight.
32-inch	. 6 lbs.
is-inch	. 10 lbs.
Price, per pound	856 \$1.00
In Boxes, sheets size 10"x50".	
inch thick. Per sheet	\$1.30
inch thick. Per sheet	
on D C	

301 P. C.



#### No. 4101 SHEET PACKING.

For Gasoline Engine Cylinder Heads.

This Packing is made of Asbestos, with fine brass wires intertwisted in each strand. It does not burn, char, harden, nor blow out like rubber, cloth and other so-called "gas engine packings." It is pliable, compressible, and easily cut. One side is graphited, and it is all ready to apply.

Furnished in rolls 40 inches wide, and is 32-inch thick.

Weight per running yard, 4½ pounds. No. 4101. Price, per pound...1103 \$1.75

### GARCO ASBESTOS AUTO SPECIALTIES



### Garco Valbestine Valve Stem Packing

Special selected asbestos yarn, thoroughly lubricated. Twisted or braided. For high pressure steam, hot water, acid, etc. 1/4, 1 and 5-pound spools.

1/4-lb. Spools.

Each ..... 452 \$0.75 1-lb, Spools.

Each .....1401 1.75



### Pyroid Compressed Asbestos Sheet Packing

A high grade Fibre Sheet Packing for extreme temperatures. Red, grey or graphite. Sheets 50" square, 1/32", 1/16" and 1/8" thick.

Per lb...... \$006 \$1.50



# ASBESTOS YARN. For Packing Spark Plugs.

thickness.

This is a pure two-ply Asbestos Yarn, each strand of which contains a fine brass wire. It is fire-proof, and exceptionally strong.

GARCO Asbestos Wick

Packing

Made of strands of Ashestos fibre, twisted in the form of round lamp wick. It is proof against fire, acids, stem, alkalies, oil and grease and has innumerable uses. Furnished in one-half or one pound balls wrapped in paper, size 14.

Per lb..... 603 \$1.00

GARCO GASKETTE

Garco Gaskette Roll

packing of great strength,

which is guaranteed to

withstand extreme temper-

ature and pressure. Packed in a convenient

size carton which fully

protects it from dirt and dust. Size of sheet 10" x 40"; 1/32" and 1/16"

½", per roll..1656 \$2.50 ½", per roll..1653 2.50

A woven asbestos sheel

It is only 16-inch in diameter.

12 Spools to 1 Pound.

Per Spool......207 \$0.45



### HEMP PACKING.

Packed in 25 and 50-foot coils.

A Grade. Per pound. 206 \$0.30

B Grade. Per pound. 183 .28

PUMP PACKING

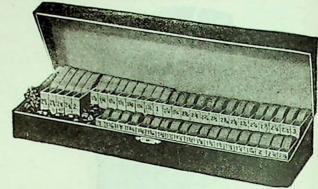
%" Diameter. Per lb. 1253 \$2.00

FORD FELT WASHER ASSORTMENTS.



Set of six Felt Washers. For Wheel Hubs, Crank Shaft and Steering Bracket.

LARGE GASKET ASSORTMENTS.



This assortment contains 218 gaskets, in the following sizes: Six each 1 to 2-inch by 16ths; four each 2 to 3-inch by 16ths; four each 1 to 2½-inch by 8ths, exhaust gaskets. These gaskets are of open or French type.

#### VICTOR GASKET ASSORTMENTS.



Standard French Type Round Gaskets. This box contains 100 assorted copper asbestos gaskets selelected from among the most popular sizes exclusively used by all repair men and garages and are selected in proper proportion to accommodate everyday repairs on all makes of automobile motors.

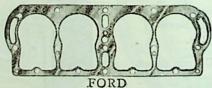
No. 24. Gasket Assortment. Per box......2553 \$4.75

### FORD FELT WASHER ASSORTMENTS.

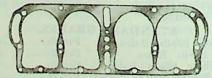


Contains a complete set of Felt Washers, 20 pieces in all, as listed on carton.

VICTOR CYLINDER HEAD GASKETS FOR FORD CARS.

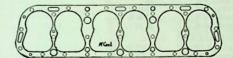


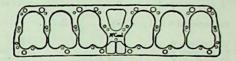
FITZGERALD CYLINDER HEAD GASKETS FOR FORD CARS.



The original copper-asbestos gaskets used on most motors for the past 20 years are McCord. They are made according to the manufacturer's blue prints and inspected according to their rigid standards. Each genuine McCord copper-asbestos gasket is stamped with the McCord trade mark and stock number.

A complete list showing the cars and models fitted is given on the following pages. To find the gasket you want, merely consult our alphabetical list under the name of car and model, which will show you the correct McCord stock number.





Alphabetical List of Cars, Trucks and Tractors Fitted by McCord Cylinder Head Gaskets

### PASSENGER CARS

	1110.	LITT	THE CARE		
McCord No. Passenger Cars Model	V	List	McCord No. Passenger Cars Model	V	List
No. Passenger Cars Model  10 Abbott 6	Icar	el of		lold	er so
27 Alsace 4	1920-22	1.10	70 Davis 4. SB, SC 71 Davis 4. SD 10 Geo. W. Davis 6. 46 68 Geo. W. Davis 6. 18 10 Detroiter 6. All models. 17 Dixie Flyer 4. LS. 30 Dixie Flyer 4. LS. 5016 Dixie Flyer 4. H-S 70 11 Dodge 4. All models. 17 Dort 4. 6, 9 and 29. 31 Dort 4. 4. 4. 27 Dort 4. 8, 11 & 15. 30 Dort 4. 5, 5A, 6, 9 & 29. 5046 Durant 4.	1916	1.75
26 Alter 4		. 1.75	10 Geo. W. Davis 646	1916-19	1.25
26 American 6. A & B. 10 American Beauty 6. Pan-American 15 American Beauty 6. Pan-American	1920-22	1.75	68 Geo. W. Davis 618	1920-22	1.50
15 American 6 A & B	. 1916 to 2	0 1.50	10 Detroiter 6 All models		1.25
10 American Beauty 6. Pan-American	1919-20	. 1.25	17 Dixie Flyer 4 LS	1917-18	1.25
10 Anderson 6200-400	1918-19.	1.50	5016 Divis Flyer 4. LS. H S 70	1917-18	1.25
			11 Dodge 4 All models	1915 to 22	65
17 Arbenz 4 25	.1917-19	1.25	17 Dort 4	1916-17	1.25
30 Arbenz 425	1917-19	1.25	31 Dort 4	1915	1.25
10 Auburn 6 39 Beauty Six	1917 to 1	9 1.25	27 Dort 4	918 to 22	1.10
17 Arbenz 4	1920-22 .	1.50	30 Dort 4	1915-17	1.25
15 Auburn 6		. 1.50	5046 Durant 4	1921-22	1.50
10 Baker R & L 6		1.25	26 Economy 4 36 10 Economy 6 45 & 46. 27 Elcar 4 D, E, F, G, H, & K 10 Elcar 6 D, G, H & K 70 Elco 4 18 Elgin 6 F, H & K 10 Empire 6 70 15 Empire 6 26 Erie 4 All models 44 Essex 4 A		1.75
10 Beggs 6	. 1918-19	1.25	10 Economy 6 45 & 46		1.25
68 Beggs 6 20 T	. 1920-22	. 1.50	27 Elcar 4	1917 to 22	21.10
17 Bell 4		. 1.25	10 Elcar 6 D, E, G, & H	1918-19	1.25
30 Bell 4		. 1.25	68 Elcar 6	1920-22	1.50
5016 Rell 4	1091 99	1.75	10 Elco 4	916	1.50
10 Birch 6 45 and 45R	1919-20	1 25	10 Empire 6 70	1916-19	1 25
27 Birch 4	1920-22	1.10	15 Empire 6.		1.50
29 Birch 4 30 and 30B	.1918-21.	1.25	26 Erie 4 All models		1.75
5016 Birch 4	.1921-22.	1.50	44 Essex 4	918 to 22	1.00
10 Bour Davis 6 17, 17B, & 18B	. 1916 to 19	9 1.25	10 F. D. M. 1 6		
97 Bradley 4	1020-22.	1 10	5039 Farmer 4	014	5.00
80 Briscoe 4 24	1916 to 19	1 25	24 Ford 4 T (all conner)	909 to 22	3.00
5050 Briscoe 4	.1920-22	2.00	25 Ford 4	909 to 22	.40
23 Buick 4 D-31, D-35, E-34,			13 Falls Motor 6  5038 Farmer 4  24 Ford 4  T (all copper)  5 Ford 4  T (tin inlay)  (steel inlay)	909-22	.40
15 Auburn 6.  10 Baker R & L 6	.1916 to 18	3 1.00	27 Gardner 4	000 00	
5051 Buick 44-34, 4-35, 4-36	1921-22.	1.00	27 Gardner 4	920-22.	1.10
10 Rush 6 All models	. 1919-22	D 25	A Ghent 6		1 25
15 Bush 6	N921-22	1.50	14 Ghent 6		1.50
as bush of the first of the fir			15 Ghent 645		1.50
8 Cadillac 8 57, 59, 61.  16 Chalmers 6 35A & 35B.  79 Chalmers 6 35C "Hot-Spot".  5016 Champion 4 S-4 Special.  27 Champion 4 C-4 Tourist 40.  7 Chevrolet 4 F, FA, FB, 490.  33 Chevrolet 8 D4 & D5.	.1917 to 22	1.25	15 Glide 6	916 to 22	1.50
16 Chalmers 6 35A & 35B	.1916 to 18	1.75	26 Golden, Belknap &		
79 Chalmers 6	. 1918 to 22	1.75	61 Crant 4 Motor 4. E. PM &S	015	2.00
27 Champion 4 C-4 Tourist 40	1916 to 22	1 10	18 Grant 6 K & G 1	917 to 20	1 50
7 Chevrolet 4 F. FA. FB. 490		.65	27 Gray-Dort 4	918-22	1.10
33 Chevrolet 8 D4 & D5	.1917-18	1.25			
5009 Chrysler (Willys) 6		2.00	26 Hackett 4 All models 1	916-19	1.75
95 Cleveland 6 40	.1919 to 22	1.00	10 Halladay 6	019 10	1.25
45 Cole 8 950 960 970 990	1916 to 22	1.50	15 Halladay 6 91,99,93,94 1	919-19.	1.50
33 Chovrolet 8 D4 & D5 5009 Chrysler (Willys) 6 95 Cleveland 6 40 5016 Climber 4 K 45 Cole 8 850, 860, 870, 880 18 Colomia 6 35 10 Columbia 6 68 Columbia 6 68 Comet 6 C-53-2 27 Commonwealth 4 40-42 5016 Continental Motor 4 OA	.1910 (022	1.50	26 Hackett 4 All models 1 10 Halladay 6	920-22	1.10
10 Columbia 6	1917 to 20	1.25	10 Hanson 61	919	1.25
15 Columbia 6	1919 to 22	1.50	68 Hanson 6	920-22	1.50
68 Columbia 6	.1920-22	1.50	10 Harvard 6		1.25
68 Comet 6	1921-22	1.50	20 Harvard 4 20	091 99	1.00
5016 Commonwealth 4 40-42	1021-22	1.50	61 Hasalting 1 All models		9 00
5 Continental Motor 4 OA	. 1921-22	1.00	26 Hatfield 4.		1.75
10 Continental Motor 6.7W		1.25	5016 Hatfield 4 42	920-22	1.50
13 Continental Motor 6.7V		1.25	26 Hatfield 4. 42 1 1 5016 Hatfield 4. Series 2. 1 1 5016 Herschell-Spillman, Motor 4, Model 7000	920-22	2.00
14 Continental Motor 6.6H		1.50	5016 Herschell-Spillman, Motor 4, Model 7000.		1.50
68 Continental Motor 6.7R		1.50	10 Highlander 6. All models	)20-22	1.25
5046 Continental Motor 6.8AA		1.50	5016 Hilton 4	091.99	1 50
10 Crawford 6 40	1916-20	1 25	10 Hollier 6	919-20	1.25
17 Crow-Elkhart 4 E-30, E-33	1916-17.	1.25	18 Hollier 6	917-18.	1.50
27 Crow-Elkhart 4 K, C, E, L.	1917 to 22	1.10	6 Hudson 6 Super Six (H.J.M.O.) 1	915 to 21	1.00
15 Crow-Elkhart 6H	1919 to 22	1.50	10 Highlander 6	922	1.50
14 Continental Motor 6.6H 68 Continental Motor 6.7R 5002 Continental Motor 6.8AA 5046 Continental Motor 4 10 Crawford 6.40 17 Crow-Elkhart 4.E-30, E-33 27 Crow-Elkhart 4.K, C, E, L 15 Crow-Elkhart 6.H. 5016 Curtis 4.45	.1920-22	1.50	10 Hullman 6		1.25

### PASSENGER CARS-Continued

McCord No. Passenger Care		Year 1	List Price	McCord No. Passenger Cars			List Price
68 Huffman 6	32	1920-22 1912 to 14	1.50	26 Olympian 14 Overland 6	.82	.1915-16	\$1.75
3 Hupmobile 4	R	1917 to 22	1.00	38 Overland 4	.85 .75B & 90	.1916 to 18	1.00
15 Imperial 6	56		1.50	10 Overland 6. 38 Overland 4. 39 Overland 4. 72 Overland 4.	.83B & 85	.1916 to 18 .1919 to 22	1.75
10 Jackson 6	38	1919	1.25	19 Packard 12	.2-25 & 2-35	.1916-17.	1.75
10 Jackson 6. 68 Jackson 6. 45 Jackson 8. 27 Jackson 4. 15 Jeffrey 6. 68 Jordan 6.	349 & 350	1916 to 18	1.25	40 Packard 12	.3-25 & 3-35	.1917 to 22	1.75
27 Jackson 4	Chesterfield	1921-22	1.10	14 Paige 6	46	.1914 to 18	1.50
68 Jordan 6	M	1920-22	1.50	98 Packard 6 14 Paige 6 15 Paige 6 78 Paige 6 78 Paige 6 5002 Paige 6 15 Pan-American 6 10 Pan-American 6 10 Paterson 6 11 Paterson 6 12 Paterson 6 13 Paterson 6 10 Pathfinder 6 26 Pennsy 4 17 Pennsy 4 10 Pennsy 6 27 Piedmont 4 10 Piedmont 6	.36, 38, 39, 40	.1915 to 19	1.50
10 Jordan 6		1910-19	1.20	5002 Paige 6	66.:	.1920-22	2.00
2 Keeton 4	100 D 1 1 C	1914-15	1.50	10 Pan-American 6	American Beauty.	.1919-20.	1.25
5048 Kissel 6	100 Point Six	1921-22	1.50	2 Paterson 4	45, 46, 47, 48, 49	.1914-15 .1916 to 20	1.50
10 Kline 6	38 F & G, 42H	1917 to 19	1.25	13 Paterson 6	50	1000 00	1.25
				10 Pathfinder 6	All models	.1920-22	1.25
96 LaFayette 8 26 Laurel 4	95	1920-22	2.00	26 Pennsy 4	.18	1016-17	1.75
26 Laurel 4. 29 LeRoi Motor 4 41 Lewis (L. P. C.) 6 10 Lexington 6	2C	1917-10	1.25	10 Pennsy 6	All models	.1910-11	1.25
41 Lewis (L. P. C.) 6	R	1914-15 1918 to 20	1.25	27 Piedmont 4 10 Piedmont 6	.30	.1917 to 22 .1917 to 20	1.10
68 Lexington 6	S	1920-22	1.50	30 Piedmont 4 46 Pierce-Arrow 6	20 04 V-L	.1915-16 .	1.25
10 Liberty 6	10A	1920-22	1.25	26 Pilgrim 4	.All models	. 1919-21	1.75
27 Lone Star 4	30	1920-22	1.10	18 Premocar 6	Magic 6-40	.1921 to 22	1.50
10 Louisiana 6	Bour Davis	1920-22	1.00	26 Princess 4	.24	.1916 to 18	1.75
21 Lozier 4	17, 17B, 18B	1916 to 19	5.00			D. D. Line Land	
17 Lycoming Motor 4	5A, (DU New)		1.25	69 Reo 6	.10	.1920-22	2.00
30 Lycoming Motor 4	L		1.25	15 Rutenber Motor 6.	.22 & 25		1.50
68 Lexington 6. 10 Liberty 6. 97 Liberty 6. 27 Lone Star 4. 5016 Lorraine 4. 10 Louisiana 6. 21 Lozier 4. 17 Lycoming Motor 4. 27 Lycoming Motor 4. 30 Lycoming Motor 4. 31 Lycoming Motor 4.	R		1.25	15 Sawyer 6	All models	-0.000	1 50
15 Madison 6		1916 to 22	1.50	15 Sawyer 6	.A & B	1914 to 17	1.00
18 Maibohm	A & B	1917-22	1.50	10 Sayers 6	P, AP, BP, CP, DP	.1915 to 19	1.25
42 Marmon 6	34 & 34B	1917 to 19	2.00	5 Saxon 4 13 Saxon 6 10 Sayers 6 68 Sayers 6 20 Scripps-Booth 4 37 Scripps-Booth 6 68 Scripps-Booth 4 29 Seneca 4 7 Sheridan 4 45 Sheridan 8	5C	.1920-22	1.50
5007 Marmon 6	34C	1920-22	1.00	37 Scripps-Booth 6	.39 & B-39	.1918 to 21	.75
22 Mason Motor 4			1.00	68 Scripps-Booth 6 7 Scripps-Booth 4	G	.1921-22	1.50
22 Mason Motor 4 33 Mason Motor 8 32 Maxwell 4 1 Maxwell 4 37 McLaughlin Light Si 9 Metz 4 15 Metz 6 10 Midland 6 5045 Mitchell 6	25	1914-15	1.00	29 Seneca 4	27, A, D, H, I, L	.1918 to 22	1.25
1 Maxwell 4	25	1916 to 22	.75	45 Sheridan 8 27 Skelton 4	.В-40	.1920-21	1.25
9 Metz 4	All models	1915-18	1.75				
15 Metz 6	A	1919-20	1.25	30 Sphinx 4. 68 Stanwood 6. 26 States 4. 5039 Stephens Salient 6.		.1915	1.25
5045 Mitchell 6 10 Monitor 6	D40, E40, F40	1917-22	1.50	26 States 4	B-18	1920-22	1.50
68 Monitor 6	Series three	1920-22	1.50	5039 Stephens Salient 6.		.1917-22	1.25
				64 Sterling Motor 4			2.00
10 Moon 6	26 6 20	1019 10	1.25	27 Sterling 4	A	1921-22.	1.10
68 Moon 6	48 Victory	1919 to 22	1.50	29 Sterling 4	A	1921-22.	1.25
13 Moon 6	30-F & 36-C	.1916-20	1.75	5039 Stephens Salient 6. 20 Sterling Motor 4. 64 Sterling Motor 4. 27 Sterling 4. 5016 Sterling 4. 29 Sterling 4. 43 Studebaker 6. 89 Studebaker 6. 93 Studebaker 6. 5043 Studebaker 4.	. Special 6, Series 20	1919-22	1.50
15 Moore o	in models,,		2.00	93 Studebaker 6 5043 Studebaker 4	Light 6, Series 20	1920-22	1.50
27 Napoleon 4	All models		1.10	10 Sun 6	.or & on	. 1910-19	1.25
88 Nash 6	681, 691	1918 to 22	1.25	10 Supreme 6	All models		1.25
5008 Nash 4	Series BB Sextet	. 1920-22 . 1919 to 22	1.25	26 Texan 4			1.75
90 Nelson 4	D	1917 to 19	2.00	26 Texan 4	A-38, & B-38	1918-22	1.10
60 Name 6	Charles and the second second second	1920-22	1 50	27 Tulsa 4	D & E	1918-19.	1.10
2 Northway Motor 4.	52 & 54		1.50	5016 Tulsa 4	.Е	1920-22.	1.50
37 Northway Motor 6	200 200		.75	10 Velie 6	.22, 27, 28, 38	1916-19	1.25
45 Northway Motor 8.	209		1.25	18 Velie 6	48	1620-22	7 50
2 Northway Motor 4. 4 Northway Motor 4. 37 Northway Motor 6. 45 Northway Motor 8. 5017 Northway Motor 8. 27 Norwalk 4.	18-40	.1919 to 22	1.10	20 Vindex 4			1.00
27 Ookland 6	39 39B 34 34B 34C	21916 to 22	. 75	18 Washington 6.		1920-22	1.50
2 Oakland 4	36, 37, 38	.1914 to 16	1.50	18 Washington 6 91 Weidely Motor 4 2 Westcott 4	M, MA & MAT	1014	2.00
45 Oakland 8 4 Oldsmobile 4	42 & 43	.1914 to 16	1.50	10 11 0000010 0	. TI, II, D-10, A-50	1914-15 . 1916 to 19	1.50
7 Oldsmobile 4	43A	.1921 to 22	.65	08 Westcott 6	Lighter Six R-38		
45 Oakland 8. 4 Oldsmobile 4. 7 Oldsmobile 4. 37 Oldsmobile 6. 5017 Oldsmobile 8. 5052 Oldsmobile 8.	45, 45A, 45B	.1916 to 21	1.25	5009 Willys (Chrysler) 6 70 Woods Mobillette 4	C-38	1919 to 22	2.00
5052 Oldsmobile 8	47	.1921-22.	1.25	70 Woods Mobillette 4	, 5	1916	1.50
		. 1021 3					

T	R	TI	C	K	S
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McCord		List	McCord			List
No. Trucks	Model	Capacity Price	No. Trucks	Model		Price
81 Acason	M	2½ ton\$2.00 5 ton2.00	5004 Hall	.K	5 ton	\$2.00
67 Acme	E	5 ton 1.50	35 Hercules Moto	r.C & C2		50
Truck	20	1 ton 1.50 1, 1½ & 2 ton 1.50 24 & 1½ ton 1.10 34 ton 1.75 1 ton 1.10 34 ton 1.10 34 ton 1.10 54 ton 1.50 1½ ton 1.50 1½ ton 1.50 1½ ton 2.00 5 ton 1.50 7 ton 2.00	5016 Herschell Spill-			
5016 All America 27 A. M. C	n	1, 1½ & 2 ton 1.50 3/4 & 1½ ton 1.10	5016 Herschell Spill- man Motor. 26 Highway Moto 5004 Higrade. 5001 Higrade. 57 Hinkley Motor 58 Hinkley Motor 96 Hinkley Motor	r E, PM & S.		1.50
26 American	C	34 ton	5004 Higrade	A-18 B-20	1 ton	2.00
27 Atco	W-20	.34 ton 1.10	57 Hinkley Motor	HA200 & HAS	500	1.75
27 Atlas 67 Atterbury	18 & 21 8E	.5 ton	86 Hinkley Motor	.HAA300 & H.	AA400	1.50
5004 Atterbury	20R	.1½ ton 2.00	58 H. R. L	.H-2, R-1, L-3	.3, 2 & 1 ton	1.50
82 Available .	H7	.7 ton 2.00	82 Indiana	.51	5 ton	2.00
26 Bell		3/4 ton 1.75				
26 Bethlehem.	D 91	.1 & 1¼ ton (1916) 1.75	17 Kearns	.C & D	1/2 ton	1.25
36 Bourne	XM	.3½ ton	5016 Kearns	H & N	.34 & 11/2 ton	1.50
67 Brockway	Т5	.5 ton	17 Kearns 30 Kearns 5016 Kearns 5016 Kochler 5004 K-Z	.C	.1¼ ton	2.00
23 Buick	E-4	3/4 ton     1.75       1. & 1½ ton     (1916)     1.75       4 ton     1.75       3½ ton     50       5 ton     1.50       2 ton     1.10       3/4 ton     1.00	29 Lafayette 67 Larrabee-Deyo 26 Lawson 29 LeRoi Motor 5016 Leudinghaus 29 Loyal		1/ ton	1 05
27 Champion	40	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	67 Larrabee-Deyo	w	.5 ton	1.50
5016 Champion.	A & T	.1200 lbs	26 Lawson 29 LeRoi Motor	.M35	.½ ton	1.75
5016 Climber	A	.1½ ton 1.50	5016 Leudinghaus.	.C	.1 ton	1.50
27 Collier	120В	1/2, 3/4 & 11/4 ton . 1.10	29 Loyal 26 Luverne 5016 Luverne 17 Lycoming Mot 27 Lycoming Mot	BBL	.2 ton	1.75
58 Columbia	G	.1½ ton 1.50	17 Lycoming Mot	or 5A (DU New	.1½ ton	1.50
27 Comet	1-T-2	1 & 1½ ton 1.10	27 Lycoming Mot	or K, KA, KB,	KM	1.10
27 Conestoga. 67 Continental	Motor . B2	.1½ ton	30 Lycoming Mot	OL L		. 1.23
83 Continental	Motor	1.50	5004 Maccar	.S	.1 ton	1.50
			18 Maibohm		.1/2 ton	1.50
5004 Continental	Motor J-4	2 00 5 ton 1 50 1/4 ton 1 25 11/2 ton 1 50	57 Mapleleaf	B-B, C-C	.2½-3, 3½-4 ton.	1.75
29 Corliss	A	1/2 ton 1.25	86 Mapleleaf	.D-D	.5 ton	1.75
5016 Cyclone	Α	.172 ton 1.50	5004 Maccar 67 Maccar 18 Maibohm 58 Mapleleaf 57 Mapleleaf 86 Mapleleaf 27 Marshall 1 Maxwell 67 Menominee 86 Menges 5026 Midwest Engin	.25	.12 & 1 ton	75
29 Day Elder.	J	34 ton 1.25 1 ton 1.75 34 ton (1916) 1.25 (1915) 1.50 1 ton 1.50 5 ton 1.50 114 and 2 ton 1.50 312 ton 1.75 5 ton 1.75 5 ton 1.75 5 ton 1.50	86 Menges	B	.5 ton	1.50
29 Denby		34 ton (1916) 1.25	5026 Midwest Engin 84 Moline 67 Moreland 67 Moreland 27 Myers	e408	114 ton	1.75
5016 Dependable	A	.1 ton	67 Moreland	.19G & 20G	4 ton	1.50
67 Diamond T	FS T& II	.5 ton 1.50	27 Myers	.55, 60, 75 & 80	5 ton	1.50
57 Diamond T.	K	.3½ ton 1.75				
86 Diamond T. 5003 Diamond T.	EL	.5 ton	5016 Napoleon 67 Nelson-LeMoor	F5	.5 ton	1.50
5016 Diehl	B	.5 ton	27 Noble 27 Norwalk	A21 25E & 35E	.1 & 136 ton	1.10
15 Double Driv	reC	.1½ ton 1.50				
15 Double Driv	e. B	.3 ton	17 Old Hickory	M35	34 ton	1.25
17 Ellsworth	25A	16 ton 1.25	30 Old Hickory	. M35	.% ton	1.25
30 Ellsworth	25A	1/2 ton	82 Old Reliable	K, L, M	.7 ton	2.00
		****	57 Oneida	D-9	.3½ ton	1.75
27 Fageol 81 Fageol		3½-5 ton 2.00	2 Oakland 17 Old Hickory 30 Old Hickory 27 Old Hickory 82 Old Reliable 7 Oldsmobile 57 Oneida 58 Oneida 86 Oneida 5016 Oshkosh 38 Overland	A-9, B-9, C-9.	.1%, 1% & 2% to	on 1.50
35 Federal	S, T & U W & X	.1, 1½ & 2 ton50 .3½ & 5 ton50	5016 Oshkosh	A	.2 ton	1.50
5004 Federal	SD	1.1½ ton 1.10 3.1½-5 ton 2.00 1.1.1½ & 2 ton 50 3.1½ & 5 ton 50 1 ton 2.00 6 ton 1.50	38 Overland	83BOE	.1200 lbs	1.75
or rederal		1 ton 40				
25 Ford(tin inla	iy) 1	1 ton	58 Paige 57 Paige 86 Paige	54-20	213 ton	1.75
29 Forschler	S	34 ton 1 . 25 11½ ton 1 . 50 34 and 2 ton 1 . 50	67 Parker	M9	.5 ton	1.75
5016 Frontmobile 5016 Fulton	A & C	34 and 2 ton 1.50	58 Patriot	Lincoln	.114-214 ton	. 1.50
26 Com	M.	1/2 ton 1.75	67 Parker 58 Patriot 57 Patriot 27 Piedmont	H30	134 ton	1.10
26 Golden, Ball	cnap & Swartz Mo	34 ton	20 Floneer	1111	. I ton	
		S 1.75 1-1½ ton	5019 Pittsburgh Mod 57 Power	Ç	334 ton	1.75
		5 ton 1.50	58 Power 27 Premocar	B-143	112 ton	1.50
Bernstein.		234 ton 1.75	67 Rainier	10X & 14	1 ton	1.25
Bernstein.	35	3½ ton 1.75	26 Reya 58 Reynolds	3A	115 ton	1.75
67 Hahn		5 ton 1.50	57 Reynolds		21/2 ton	. 1.75
57 Halfor	B	5 ton	58 Reynolds 57 Reynolds 86 Reynolds 17 Rush	D&F	34 ton	1.25
Jo Handi		Cont	inued			
	(	Copyright 1921, McCord	Manufacturing Co.,	Inc.		
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### TRUCKS-Continued

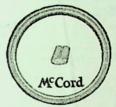
McCord		List	McCe				List
	Model Car	acity Price	No	Trucks	Model	Capacity	Price
7 Samson		4 ton\$0.65	67	II S Military	Truck, Class B.	5 ton	\$1.50
		2 . 00			Truck, R		
5001 Schwartz C2		2 . 00			Truck, S		
27 Schwartz A.		1.10	0.	O. D. Motor	ruck, Dillini	0/2 104	
29 Selden		1.25	25	V:	05 8 00	1 6 0 100	50
67 Selden5A	5 ton.	1.50			25 & 22		
29 Seneca F, l	L2 & M2036 ton.	1.25		Vim	27 & 28	3 ton	
5026 Service	34 & 1	ton 1.75	2019	vim	& 20	/2 ton	1.23
67 SignalR.	5 ton.						
						5 ton	
	5 ton.					3½ ton	
		1.75				5 ton	
81 Sterling						3½ ton	
		6 ton 2.00		Waukesha Mo			
				Waukesha Me			
		1 . 25		Wellman Seav			
5016 Stewart 12.		1.50		Wilson		11/2 ton	
		1			EA		2.00
27 Texan				Wilson		31/2 & 5 ton	1.50
67 Tiffin TV				Wilson			1.50
67 Tiffin UV		1.50		Winther	751	3/4 ton	1.50
5016 TriangleA.		1.50					
5049 Turner & Moore	Motor 4	2.00	5016	Yale	A	1½ ton	1.50

### TRACTORS

McCord No. Tractors Model	Rating	List Price	McCo No.	Tractors	Model	Rating	List Price
5020 Advance Rumely "Oil Pull" K	12/20	\$1.50		Holt Caterpillar			\$1.50
5020 Advance-Rumely "Oil Pull"K 5021 Advance-Rumely "Oil Pull"H	16/30	1.75	29 1	Holton	.2-A	10/16	1.25
5022 Advance-Rumely "Oil Pull" G	20/40	1.50	29 1	Indiana. L. H. C. L. H. C.	F	5/10	1.25
29 Allis-Chalmers General Purpose	6/12	1.25	29	. H. C		6/12	1.25
5044 Aro		1.10	49	I. H. C	Titan (1916 to 1	8)10/20	2.00
52 Aultman & Taylor. 56 Aultman & Taylor.	30/60	2.00	5011	I. H. C	HC (1921)	8/16	2.25
61 Aultman & Taylor	18/36	2.00	5015	I. H. C. International	(1917 to 21)	15/30	1.50
61 Aultman & Taylor. 5027 Avery. TA, TB, W, WB.	. 12/25 8	2 00	5030	I. H. C			1.50
5028 Avery	12/25	0 1.00	26	Kardell Utility			
	23/3	0 1.00	82	Keystone		15/30	2.00
5029 Avery	12/25 8	S.		Knickerbocker Jr			1.25
5031 Avery	25/5	0 1.00	51	LaCrosse	.F & G	12/24	1.50
5031 Avery 4 28x6 5032 Avery 4 28x6 5032 Avery 4 28x6 5032 Avery 4 28x6 5032 Avery 5032		1.50	29	Lang LeRoi Motor	2C	15/30	2.00
5033 Avery 466x7	14/28	.50	89	MacDonald	.20	15/29	2.00
5034 Avery 45/x7 5035 Avery ZA	14/28	.50	81	Magnet	В	14/28	2.00
5035 Avery ZA Z, ZB Z, ZB	8/16	.35	5026	Midwest Engine	408		1.75
5036 Avery Z, ZB. Z, ZB	40/80	.50	5006	Minneapolis	. All Purpose	12/25	1.50
	40/00	.00	36	Minneapolis		12/24	2.00
29 Bailor, Two-row Cultivator A. & W	6/10	1.25	30	Mogul (See I. H. C.)		12/2.6	.30
20 Rean Track Pull	6/10	1.25	50	Mogul (See I. H. C.) Moline	.43/4x6		1.50
29 Bean Track Pull	16/32	2.00	81	Moline Orchard Culti- Moline	vator	9/18	1.00
		1 00	95	Montana	Universal D	9/18	1.00
66 C I Best "Tracklayer" C75 H. P.		2.00	82	Nilson, Sr		20/40	2.00
63 C. L. Best "Tracklayer" B25 H. P		. 1.75		Oil Pull. (See Advan		20,10	2.00
76 C. L. Best "Tracklayer" D30 H. P		. 1.75		Parrett Cultivator.		6/19	1.25
82 Bull Dog Road Tractor, 30		. 2.00	29	Planet, Jr		5/10	1.25
54 J. I. Case	15/27	2.00	1 31	Prairie Dog	. D	15/30	2.00
87 J. I. Case	10/18	1.75	29	Ranger Cultivator	.T20	6/12	1.25
5005 I I Coso		. 1.75	29	Reindeer	.В	8/16	1.25
Caterpillar (See Holt)  48 Cleveland "Cletrac", H, 1918-19.  91 Cleveland "Cletrac", 1918-19-20.  5005 Cleveland "Cletrac", W1920.  5016 Common Sense.  8.	19/90	2.00	7	Samson Iron Horse	.D		.65
91 Cleveland "Cletrac" 1918-19-20	12/20	2.00	29	Shawnee		6/12	1.25
5005 Cleveland "Cletrac", W1920	12/20	2.00	29	Star		5/10	1.25
5016 Common Sense8		. 1.50		Stockton			1.50
85 Ebert	12/20	1.50	65	U. S. Military Artiller Uncle Sam	у	5 ton	2.25
20 Emerson Branting-			91	Chcie Sam		12/20	2.00
ham Cultivator101	6/12	1.25	20	Titan. (See I. H. C.) Toro Cultivator		6/19	1.25
81 Essex	15/30	2.00	-	Tracklayer. (See C.	L. Best)	0/12	1.25
27 Fageol	9/18	- 1.10	29	Tracklayer. (See C. Traylor.	.T	6/12	1.25
28 Fordson	12/20	1.10	82	Trundaar	.10	25/40	2.00
General Purpose (See Allis-Chalmers)				Victory Cub			1.25
26 Coldan Balknan & Swartz Motor (High	way)	1.75	81	Waukesha Motor	.DU		2.00
86 Graham Bros	15/30	1.75	82	Waukesha Motor Weidely Motor	.E.U		2.00
47 Hart-Parr30		2.00	91	Weidely Motor.	M. MA & MAT		2.00
20 Heider Cultivator 10	6/10	1.25	92	Weidely Motor. Wellman Seaver Mor	gan	15/30	2.00
5016 Herschell-Snillman Motor 7000		1.50	29	Wilson Cultivator	. J	6/12	1 25
26 Highway Motor. 65 Holt Caterpillar 5 ton	05/40	1.75	91	Wilson	F		2.00
65 Holt Caterpillar5 ton	25/40	2.25	1 62	Wisconsin	· F · · · · · · · · · · · · · · · · · ·		2.00

# McCord Copper-Asbestos Gaskets Reg. U. S. Pat. Off.

Type C (Closed or McKim Type)



McCord No.	Size	List Price Per 100						
500	J. x 11	8 .80						
500C	36 x 3/8	90						
500D	11 x 15 x	390						
500E	22 22							
	38 x 38							
500F	50 m 10							
500G	28 x 34							
500H	21 X 16.							
5001	25 x 56.							
500K								
500L								
	10 5							
501		80						
503	1/2 x 3/4.							
503A	16 x 11.	1.00						
505	6 11							
505A	10	1.00						
507A	98 x 34.	1.00						
507B	% x 14.	1.00						
509	14 x 1/8.							

McCord No.	Size	List Price Per 100	McCord No.		List Price Per 100
509A	11 - 1	\$1.00	113	.1#x1#".	Per 100 \$1.98
510	11 x 11	Metric90	1 114	134 + 9	2 00
510D	31 7 11	1.00	114A	.134 x 1 14	2.00
511	37 - 11		115	.i 1 x 2	2.02
511A	3/ 7 1 16	1.00	116	.1 1 x 2 1	2.00 2.02 2.04
512A	21 - 116	1.20	1108	.1 +2 x 2	2.10
513	H + il		118	.1 3% x 21/4	2.12
513	11 71%		118A	.134 x 2 tz	2.20
515	76 x 1/6	S.A.E	118D	176 x 21/	3 00
516			120	.1 H x 214	2 16
100	7 7 11/	1.04	121A	.1 1 x 2 7	3.00
	11 7 11	2.00	122	.2 x 214	2.20
101	12 713	1.16	122A	.2 x 2 1	2.20
102	116 7 136	1 30	122E	.2 x 236	3.00
103	12 x 12	1.30	123	2 tr x 214	2.22
104	11/2 - 11/6	80	123B	91 - 911	3 00
104B	11/ x 15%		124	2 tx 2 te	2.24
107	1 % x 116	1.74	127	.21/4 x 23/4	2.40
107C	13 x 13	2.00	127A	.214 x 2 %	2.50
108	136 x 156	1 76	128	.2 1 x 2 14	2.42
108A	136 7 14	2.00	130A	.2 1 x 236	2.50
108R	111 x 2 16.	2 50	132	.21/4 x 21/4	2.48
109	14 x 14	1.80	132C	.214 x 211	2.50
110	116 x 13/	1.90	139E	21/ x 23/	3 30
110R	116 + 14	2.00	133A	.23 x 23	2.60
110C	112 - 112	2.10	137	.236 x 256	2.56
110D	116 + 121	2.20	137B	.236 x 236	3.00
110H	111 x 216	2.50	139	24 x 211.	2.64
110-I	1 14 x 2	2.50	142	.216 x 234	2.70
111	12 x 14	94	142C	216 + 276	3 40
111B	1 % x 1 15	2.10	144A	.2 % x 234	3.00
112	156 x 176.	1.96	145	.2% x 2%	3.00

Intermediate sizes and prices on application

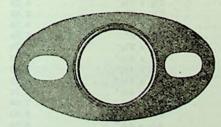


	-			
McCord No.	Size	List Price Per 100		
400A(IF)	. v x 36"	\$2.50		
400B(IF)	14 x 36.	2.50		
400C(IF)	11 x 12.	2.50		
400D	11 x 12.	2.00		
405A	460 x 665	3.00		
405B	22 x 11.	1.00		
408A	15 x %.			
410				
412	11 x 1/.	94		
414	96 x 1/4.	96		

### Type F (Open or French) Type IF (Inverted French)

McCord No.	Size	List Price Per 100	McCord No.	Size	List Price Per 100
	710 x 31	\$ .97	310	. 116 x 1 H	\$2.30
418	34 x 1	1.00	311	1 % x 11/8.	2.36
418A	34 x 18.	1.00	312	1 t x 1 tt.	2.40
419	14 x 1 17.	1.10	313	1 11 x 1 3/8.	2.40
420	3/8 x 13/4.	1.20	314	134 x 2	2.44
421	H x 114.	1.20	314A	1 34 x 236.	6.00
300	1 x 114.	1.50	315	1 1 x 2 16.	2.60
301	1 1 x 1 14.	1.54	316	11/8 x 21/4.	2.64
	114 x 134.	1.60	318	2 x 214.	2.76
303	1 1/2 x 1 1/2.	1.66	318A	21 x 214.	3.00
304	11/4 x 11/4.	1.70	319	2 ta x 2 ta.	2.80
306	1 x 1 %.	1.90	320	214 275.	3.00
307	136 x 146.	2.00	322	2 1 x 2 12.	3.10
308	1 + x 1 +.	2.10	323	. 214 x 214.	3.24
309	136 x 134.	2.20	328	236 x 234.	3.64

Intermediate sizes and prices on application



# Many-in-One

Reg. U.S. Pat. Off.

### Flange Gasket

Oval shape and slotted bolt holes make many gaskets in one. In seven sizes it provides a gasket to fit every job. Select the proper size center hole being sure it is larger than the opening in the flange—trim to size with a pair of snips, and slip in the bolts.

McCord	Center Hole	List Price	McCord	Center Hole	List Price
No.		Per 100	No.		Per 100
8101		\$3.60		2*	
	11/4"		8111	2¼*	8.10
	11/6"		8113	23/2*	9.44
	A CONTRACTOR OF THE PARTY OF TH	4.74			

# McCord Copper-Asbestos Gaskets

### Type M-Center Flange-For Manifolds

McCord No.	Size	List Price Per 100	McCord No.	Size	List Price Per 100
610	1 1 x 1 1 (Wilmo	Manifold) \$3.25	604	11/2 x 2 16	\$7.50
603	11/2 - 17/7	4 00	606	13/ + 21/4"	5 80

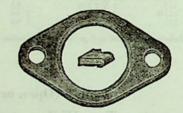
Intermediate sizes and prices on application

### Lug Type

McCord No.	Size	List Price Per 100	McCord No.	Size	List Price Per 100
700		\$3.50	704	1% x 21/4"	\$5.50
701	134 x 134"	4.20	705	1 1 x 21/4"	6.00

Intermediate sizes and prices on application

### **Exhaust or Flange Gaskets** Type E



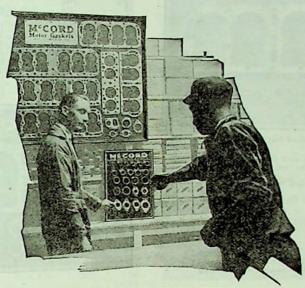
McCord No.	Centre Hole	Bolt Holes	Distance Center to Center of Bolt Holes	SIZE OVER ALL	List Price Per 100
809	1¼*	······· #*·····	21/4"	11 x 3'	\$2.10
811A	112		21/6"	134 x 2117	3.74
814	1¼*		23%*	17/8 x 3*	3.86
816	1¼*	#		134 x 215	3.86
817	1¼′		2¾*	11/8 x 3 16	3.86
821	1%"				4.18
825				21/4 x 37/8"	4.20
827A	176		2 H.*	2 1 x 3 1	4.20
828	1½*	#		2½ x 3½"	4.24
829			236*		2.40
832				2 x 21/8"	4.64
					4.68
836		13"	27%*	2¼ x 3¼*	4.68
837				23% x 33/8"	4.68
839					4.72
840					4.74
842			2¾*		4.74
843					2.60
844				21/2 x 4"	4.74
847A	111	······································		2 18 x 3'	5.50
848	131		3"	23/4 x 37/8"	5.70
851				23/4 x 41/4"	5.80
854		11'	3¼*	25% x 416	5.80
856	2'				6.20
859					6.20
865A	21/2*				7.80
866	2 16			218 x 311"	8.00
868					8.10
880088	27%*			334 x 554	10.80
883A			5 # "	4½ x 711	14.00

Intermediate sizes and prices on application

# McCord Gasket Display Boards

These attractive display boards make available immediately the small gaskets for which the demand is greatest. McCord boards are made strong to prevent warping. The colors are dark so they will stand handling.

They make a good display for showcase, window or wall



### AT YOUR FINGER TIPS

### Board No. 1

This board carries 575 gaskets. Size: 15 inches wide and 21 inches deep.

List price complete board, each \$36.25.

	Closed Type								
	Quan-	McCord	Sizes	List Price Per 100					
	tity	No.		Per 100					
	25	507-B							
1	25	510	33 x 32						
-	25	511-A	¾ x 1'	1.00					
- 7	25	515	1/8 x 1/4	96					
1	25	103	1 x 1 /2	1.36					
1	50	104	1 x 1 /	80					
	0=	100	1 16 Y   96						
		330	11/ ~ 13/	1.40					
	25	110	1 x 1 1	1.94					
	25	112	134 x 2	2 00					
	25	114		2 12					
	25	122-A	2 x 2 1	0.00					
	25	123							
	25	124	216 x 216	2.24					
Exhaust or Flange Type									
	95	809		\$2.10					
	0=	017	1 1/4 ° C. D						
	05	000	146 C. D						
	0=	000	1 2 C h						
	25	042		2.60					
			178 c. h	5.80					
	25	854	C. II						

Board No. 3 is the French Type Assortment similar to Board No. 1—It contains 575 Gaskets—425 round and 150 exhaust type. List price, \$36.25.

#### Board No. 2

This board carries 875 gaskets. Size: 17 inches wide and 26 inches deep.

List price complete board, each \$57.50.

		Closed Type	
Ouan-	McCord	Sizes	List Price
tity	No.		Per 100
25	507-B	% x 11'	\$1.00
25	507-B		
25	511-A	% x1"	1.00
25	515	% x 11/5	96
	100	1 x 11/1	
25	100		1.36
25	103		1.30
	104		80
	107-A		1.74
25	108		
25	108-B		2.50
25	110		1.90
25	111	1 x 1 11	1 94
25	111-B	16 x 11	2.10
25	III-D		1.96
25		1 1 x 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1 98
25	113		1.98
25	114	1% x 2'	2.00
25	116-B		2.10
25	118	1 1 x 2 x 2 14 x	2.12
25	120	114 x 214	2.16
25	122-A	2 x 2 1	2.20
05	199	2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2 x	2.22
25	124	2 x 2 x 2 x	2.24
25	124	214 x 214	2.40
25	127		2.40
	Exha	ust or Flange Type	
95	809	1 % c. h	\$2.10
25	817	114 ° c. h	3.86
25	829	114 ° c. h	2 40
25	020	134 c. h	4 64
25		1 1 c. h.	4 70
25	839-A		
25	843	134 ° c. h	
25	854		
25	856	C. h	
95	868	214 ° c. h	8.10
20			
	1	Ianifold Type	
25	2-in-1	lianifold Type 	\$4.00
25	603	136 x 134	4.00
20	1 1 1 T	at management in the	or to Poord
Board I	Vo. 4 is the Fre	ench Type assortment simil	ar to Board
No. 2,-1	t contains 875	Gaskets-650 round and	225 exhaust
type. Lis	st price, \$55.00		
-2 Per	Contract of the Party of the Pa		

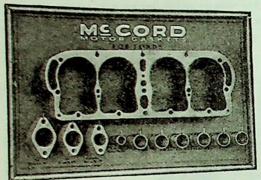
# McCord Gasket Display Boards for Fords

Quantity 25... 25...

150. 25. 25. 25.

McCord No. 24... 511...

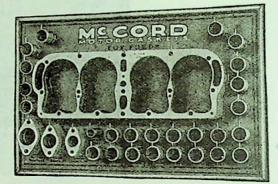
843.



Board No. 5

Board No. 6 contains 25 sets of McCord Copper-Asbestos Gaskets for Fords, including the "2-in-1" Manifold Gasket and Gland

and Chance		Board No	. 6		
Quan- tity	McCord No.		Size	Type	List Per 100
25	24	Cyl	head.		.\$40.00
150	2-in-1	114	x 116		. 4.00
25	511	1/4	x 11.	C	70
25	809	11/4	'ch	E	2.10
	829				
25	843	134	'ch	E	2.60
	Size 26 inche				
1	List price cor				



Board No. 5 contains 25 sets of McCord Standard Type Copper-Asbestos Gaskets for Fords. Board No. 5

Size 26 inches wide and 17 inches deep List price complete board, each \$21.50.

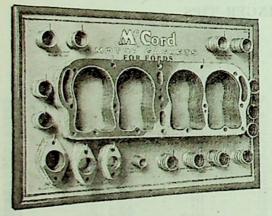
Size Cyl. head... \$\frac{34}{4} \times \frac{15}{15}\cdot \text{?} \text{.1}\frac{15}{2}\cdot \text{.1}\frac{1}{2}\cdot \text{.1}\frac{1}{2}\cdot \text{ch...} \text{...} \text{.1}\frac{1}{2}\cdot \text{ch...} \text{.1}\frac{1}{2}\cdot \text{ch...} \text{.1}\frac{1}{2}\cdot \text{ch...} \text{...} \text{ch...} \text{.1}\frac{1}{2}\cdot \text{ch...} \text{.1}\frac{1}{2}\cdot \text{ch...} \text{ch...} \text{ch...} \text{ch...} \text{ch...} \text{ch...} \text{ch...} \text{ch...} \text{

List Per 100 .\$40.00 .70 .80 .2.10 .2.40 .2.60

Board No. 6

Board No. 8 contains 25 sets of McCord Standard Type Cop-per-Asbestos Gaskets for Fords, including both ordinary closed type manifold gasket and the "2 in 1"

Quan-	McCord	Size	Type	List
tity	No.			Per 100
25	24	Cyl. head		. \$40.00
25	511	34 x 18	C	70
100	104	11/4 x 11/2"	C	80
25		136 ch		
25	829	11/9" ch	E	2.40
25	843	134 ch	E	2.60
		114 x 114.		
Name of the second	Size 26 inches	wide and 17 inches	deep	
		plete board, each		

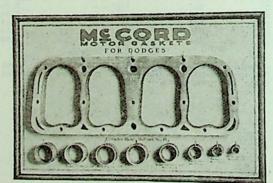


Board No. 9

### McCord Gasket Display Board for Dodge Reg. U.S. Pat. Off.

Board No. 7 contains 25 sets of McCord Copper-Asbestos Gaskets for Dodges.

		Board No. 7	
Quan-	McCord	Size	Type List
tity	No.		Per 100
25	11.:	Cyl. head.	\$65.00
25	515	1/8 x 1 1/8	·C96
25	103		"C 1.36
			C 1.96
100	118	13/8 x 23/4	C 2.12
25	507B	% x 13	C 1.00
	Size 26 inche	es wide and 17 inc	hes deep
		mplete board, ca	

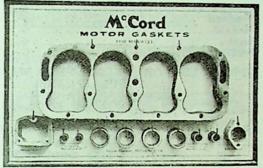


Board No. 7

## McCord Gasket Display Boards for Maxwell and Chevrolet

Reg. U.S. Pat. Off.

Board No. 9 contains 25 sets of McCord Standard Type Copper-Asbestos Gaskets for Maxwell



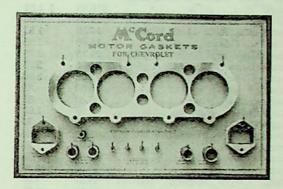
Board No. 9

Board No. 10 contains 25 sets of McCord Copper-Asbestos Gaskets for Chevrolet.

		Board	No. 10					
Quan-	McCord		Size	Type	List			
tity	No.				Per 100			
25	7		.Cyl. head					
25	103		.1 16 x 1 16		. 1.36			
100	400A		- 17 X 36"	C	. 2.50			
25	500F		. 34 x 11'	E	90			
50	506		. 12 x 11"	E	86			
25	515		. 16 x 116"	E	96			
25	1033				. 10.85			
	Size 2 inc	hes wide	and 17 inche	es deep				
List-price complete board, each \$29.75								



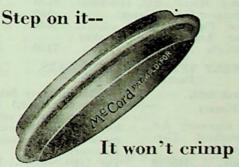
Size 26 inches wide and 17 inches deep List price complete board, each \$35.00



Board No. 10



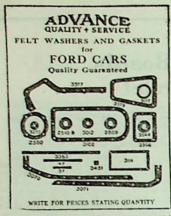
## Manifold Gasket for Ford, Buick, Maxwell, Overland, Studebaker and others



Patented Aug. 16, 1921-Other patents pending

Combines two parts, a gasket and a guide. Both sides alike—use it either way. Each flange double thickness copper completely enclosing asbestos.

Name of	McCord	Used per	Replaces	Name of Part	List Price
Car	No.	Motor	Part No.		Per 100
Ford 4 Model T, 1909 to 1922	8001			nlet and Exhaust Manifold Culet and Exhaust Manifold C	
Buick 6				Exhaust Gasket Exhaust Pilot	4,20
	8003	3		ntake Gasket	4.60
Maxwell 4			( 1	Exhaust Manifold Gasket Exhaust Manifold Ferrule	4.80
Overland 4	8002		3002631	nlet and Exhaust Manifold	
Model 4, 1919 to 1922				iasket and Pilot	4.20
Studebaker Big 6, Series 19, 20, 21		6		Exhaust Manifold Aligning R Exhaust Manifold Gasket	ing 5,60
Special 6, Series 20, 2 Four, Models SF, SH;		3	[ 16970 ]	ntake Manifold Aligning Rin	g 4.60
		Retail I	16971 Price, 10c each	Exhaust Manifold Gasket	



#### FELT AXLE SETS FOR POPULAR CARS. No. of List Prices per Car. Washers. 1,000 Sets. Buick | Part 64995 | 4 \$357.00 | Part 64780 } Cadillac ..... 300.00 Chandler .... 252.00 Chevrolet 490 .... 6 254.50 220.00 Dodge ..... 8 726.00 Hudson .... 276.00 Maxwell ..... 266.00 Oakland ..... Overland Packard 308.00 866.00 474.00 Paige ..... 304.00 Studebaker .....

Part. No.	FELT.	1,000 Lots.	100 Lots.
2510-B	Rear Axle Outer Roller Bear-		
	ing	\$16.50	\$ 1.85
2580	Ball Cap Gasket	18.00	2.00
2809	Front and Rear Hub Washers	16.50	1.85
3012	Cylinder Cover	11.50	1.25
3070	Crank Case and Cylinder (left)	24.75	2.75
3071	Crank Case and Cyl. (right).	24.75	2.75
3102	Crank Case Lower Cover	72.50	8.00
3111	Cylinder Valve Cover	6.50	.75
3177-Old	Commutator Ring	5.00	.55
	Commutator Ring	8.00	1.00
3279	Magneto Contact Washer	2.50	.45
3363-S	Trans. Cover Strip (old)		.45
3363-M	Trans. Cover Strip (old)		.50
3363-L	Trans. Cover (front)		.85
3377	Trans. Cover		3.75
3379	Trans. Cover Sloping Door		4.50
3381	Bendix Cover	11.50	1.35
3451	Control Shaft Bkt. Felt	3.50	.50
3544	Steering Post Bracket Washer		.55
5056	Motor Mount. Bkt. (Packing)		5.50
5057	Generator Head (Paper)	3.00	.45
5892	Feed Pipe Washer		.75
	Rear Axle Grease Retainer		
	3½x5/s		8.00

### FELT SETS FOR FORD CARS. Packed in Cartons.

Overhaul Sets. (21 Pieces)	Maintenance Sets. (15 Pieces)
All parts necessary for complete overhaul. Usu-	Parts commonly replaced by owner. Removal of motor or transmission not
ally a garage job.	necessary.
Per 1,000 Sets\$460.00	Per 1,000 Sets\$360.00
Per 100 Sets 50.00	Per 100 Sets 40.00

### FELT WASHERS.

	FELT WA	ASHERS.		
			LIST P	RICES.
O. D.	I. D.	Thickness.	Per M.	Per 100.
11/2	1/2, 3/4 and 1	15"	\$12.00	\$ 1.40
13/4	1/2, 3/4, 1 and 11/4	5,"	15.00	1.75
2	1/2, 3/4, 1 and 11/4	5."	19.50	2.25
21/4	1/2, 3/4, 1 and 11/4	5."	23.50	2.75
	1/ 3/ 1 11/ and 11/	16" 16" 16" 16" 16" 16" 16" 17" 1/2" 1/2"	28.00	3.25
21/2	1/2, 3/4, 1, 11/4 and 11/2	5."	32.50	3.75
23/4	1/2, 3/4, 1, 11/4 and 13/4	16		
11/2	1/2, 3/4 and 1	72	18 00	2.10
13/4	1/2, 3/4, 1 and 11/4	1/2	23.00	2.75
2	1/2, 3/4, 1 and 11/4	1/2"	29.00	3.35
21/4	1/2, 3/4, 1 and 11/4	1/2"	36.00	4.25
21/2	1/2, 3/4, 1 and 11/4	1/2"	45.50	5.25
21/2	11/2	1/2"	43.50	5.00
23/4	1/2, 3/4, 1 and 11/4	1/2"	52.50	6.00
	11/2 and 11/4	1/2"	50.50	5.85
3	1/2, 3/4, 1 and 11/4	1/2"	66.00	7.60
3	1½, 1¾ and 2	1/2"	64.00	7.35
31/4	1/2, 3/4, 1 and 11/4	1/2"	74.00	8.50
31/4	1½, 1¾ and 2	1/2"	72.00	8.25
31/2	1/2, 3/4, 1 and 11/4	1/2"	83.00	9.50
	11/ 13/ 21/ and 21/	1/2" 1/2" 1/2" 1/2"	79.00	9.25
31/2	1½, 1¾, 2¼ and 2½	1/."	98.00	11.25
33/4	1/2, 3/4. 1 and 11/4	1/2	94.00	10.85
33/4	11/2 13/4 2 21/4 and 21/2	1/2	34.00	10.00

306 P. C.

PRICE	LIST	OF SPECIAL	FELT	WASHERS	FOR
		POPULAR	CARS.		

Assortments	aggregatin	ig 1,000 piec	es will t	take t	the 1,000	prices.	
Assortments	for less	than 1,000	pieces	will	take th	e 1,000	
prices plus 10	per cent.						

prices plus	10 per cent.	Tink			List
Part No.	Size	List	Part No.	Size	price
Part No.	Size	per M.	ratt No.	5120	per M.
		BUI	CK		
D-45	25/s x 2	\$ 34.50	64991	316 x 118	52.50
D-49	43/s x 3	52 50	64995	33/8 x 21/4	105.00
2066	318 x 118	52.50	65352	318 x 118	52.50
62943	31/s x 21/4	54.00	65361	318 x 21/8	105.00
64780	33/8 x 21/8	52.50	67638	25/8 x 2	36.00
01100	0/8 4 2/8	CADIL		278 11 2	00.00
7539	2 % x 2	87.00	8054	31/s x 25/s	42.00
.000	-10	CHANI		10.	
11319-R	31/4 x 21%	52.50	11319-F	31/4 x 17/8	52.50
		CHEVR	OLET		
H-33	33/4 x 15/8	43.75	H-286	2½ x 1½	29.00
H-36	2 x 1	33.50	21916	31/s x 1 18	32.50
CM-189	5/8 x 1/4	6.00	42527	43/4 x 21/4	67.50
C1.1 100	70	DOI		2,4	
R-81	3 % x 2 %	62.00	I-166	231 x 111	27.00
	210	DOF			
X33-103	21/2 x 11/8		X33-118	31/s x 17/s	35.00
X33-110	21/s x 11/s	51.00	X33-121	218 x 133	35.00
1100 114	- 78 11 176	HUDS		-10 11 -02	
13959	2 % x 111	84.00	19144	31/4 x 1 1/4	90.00
14897	332 x 17/s	90.00			
11001	032 11/8	MAXV	VELL		
27	21/8 x 17/8	27.00	6273	31/4 x 13/4	90.00
	-7070	OAKL			
3783	3 x 13/4	54.00	4466	316 x 21/8	58.00
		OVERI	LAND		
7676	2 x 1 1 g	28.00	100432	31/8 x 23/8	105.00
		PACK	ARD		
40151	$3 \times 2^{1/2}$	162.00	70623	238 x 11/2	160.00
40454	21/8 x 2	90.00			
		PAI	GE		
2074	33/8 x 23/8	72.00	6058	33/s x 23/4	72.00
		STUDE	BAKER		
31650	2½ x 1¾	47.50	31968	318 x 2	36.00
	FORD	TRICA	T TUACTT	DDC	
			K WASH		450.00
Part No.	1021 Rear .	Axle Fe	lt		\$72.00

Part	No.	1021	Rear	Axle	Fel	t	 	 	 			\$72.00
Part	No.	1039.	Drive	Shaf	t F	elt.	 	 				54.00
			Rear									
						. C.						

### CORK SHEETS.

Made in sheets, 12x36 inches. Three thicknesses, 1/6-inch, 1/6-inch. Easy to cut with ordinary knife or shear.

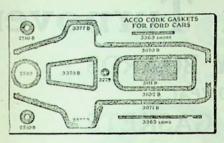


16-inch	Thick.	Price,	per	lb.	 			 			501	\$0.80
32-inch	Thick.	Price,	per	lb.	 			 			.503	.80
1/8-inch	Thick.	Price,	per	lb.	 			 			.506	.80

### GROUND CORK.

For use in transmission cases.		
Put up in one and five-pound packages.		
Price, per pound	506	\$0.

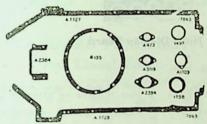
### CORK GASKETS FOR FORD CARS.



For liquid and dust-proof joints composed of clean, granulated cork and a special non-hardening binder. Is non-absorbent and will not become saturated with liquids. No danger of oil, gasoline, grease or water seeping through

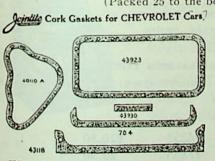
th.	em.		
Ford Cat-	Number		
alog No. Name of Gasket.	Required Per Car	Per Box	Per 100
2510B-Axle outer roller bearing washer.			\$3.00
2580 —Universal ball cap gasket		10	4.40
3070B-Crank case and cylinder gasket, R	ight 1	20	4.20
3071B-Crank case and cylinder gasket,	Left 1	20	4.20
3102B-Crank case lower cover gasket	1	10	8.00
3111B-Cylinder valve cover gasket	2	20	3.60
3279 —Magneto contact washer	1	10	.96
3363 —Short transmission cover strip	1	20	.71
3363 —Long transmission cover strip	1	10	1.42
3377B—Transmission cover gasket		20	5.40
3379B—Transmission cover sloping of	loor		4
gasket	1	10	5.40
Acco cork gaskets for Ford of	ars		
in complete sets. Per set			.60
In addition to the above parts, the fo	llowing	gaskets	s for
use on Ford cars equipped with self-st	arters c	an also	o be
supplied:			
3381 -Bendix cover gasket	1	10	\$3.00
5056 -Motor mounting bracket gasket.	1	10	3.00
337 P. C.			

- Scintile Cork Gaskets for DODGE Cars



No. Name of Gasket. Price, per M A7727—Right side crank case gasket. \$100.00
A7727-Right side crank case gasket\$100.00
A7728-Left side crank case gasket 100.00
A7863-Both ends crank case gasket 50.00
A2384-Starter generator chain cover gasket 50.00
R135—Rear axle housing gasket 200.00
A473—Circulating oil strainer gasket 30.00
A3719—Oil pump case gasket
A2394—Breather pipe flange gasket 50.00
A1709—Oil pump cover gasket
1798—Crankshaft rear bearing oil retainer 100.00
1497—Transmission shaft rear bearing oil retainer 100.00
1603—Rear bearing oil retainer (clutch) 100.00
A1599—Front bearing oil retainer (clutch) 100.00
Complete set Dodge gaskets. Per set 1.25
(Packed 25 to the box.)

254 P. C.

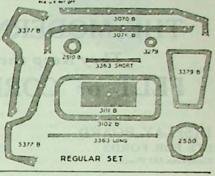


704—Oil pan gasket (490 Model).\$80.00 43932—Oil pan gasket (for F. B. Model & Truck).

Per M.....\$250.00
43118—Crank case
gasket (for F.
B. Model and
Truck).
Per M.....\$150.00

 WISOID GASKETS FOR FORD CARS.

# GASKETS FOR FORD MOTOR CARS



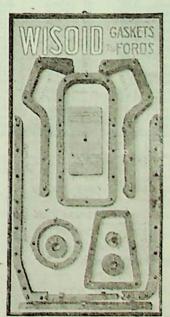


FOR 1920 AND LATER HODELS

A tough vegetable fibre containing no rubber, rubber substitute, oil or mineral products. Hence its high tensile and shearing strength. Chemically treated to resist deterioration under all liquid conditions, possesses remarkable longevity. The gasket lies flat, seldom requires even a dab or two of grease, and never requires shellac or whitelead. Easily removed and replaced and serves for an indefinite number of replacements.

	*****
Ford	per
Cat. No. Name of Gasket. car	100
3070B-Crank case and cylinder gasket 1	\$12.00
3071B-Crank case and cylinder gasket 1	12.00
3102B-Crank case lower cover gasket 1	20.00
3379B—Transmission cover sloping door 1	15.00
3377B—Transmission cover gasket	12.50
3111B-Cylinder valve cover gasket 2	8.00
2510B-Axle outer roller bearing 4	2.00
2580 —Universal ball cap gasket 1	10.00
3279 -Magneto contact washer 1	2.00
3363L—Transmission cover strip 1	3.00
3363S—Transmission cover strip 1	2.00
For 1920 and Later Models.	
5056 —Motor mounting gasket 1	5.00
5057 —Generator head gasket 1	3.00
3381 —Bendix cover gasket 1	3.00
One complete set. Per box	1.25

### WISOID FORD GASKET BOARDS.



For Both Sales and Service, Enameled Sheet Steel Display Holder.

No

Price

It is your salesman.

Holder, with total of 325
Wisoid gaskets, 25 each,
size, including an additional 25 of Nos. 2510B and
3377B \$32,00

(Each holder packed in separate corrugated carton, ready for forwarding.)

258 P. C.

# Big Profits and Quick Turnover

## THE MODERN WAY---DISPLAY BOARDS

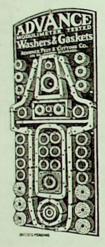
They Keep the Goods in Good Shape—COMPACT

## FELT or CORK WASHERS and GASKETS

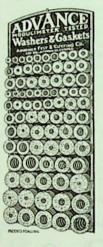
No. 1 DISPLAY BOARD FELTS FOR FORDS Contains 561 Pieces

No. 2 DISPLAY BOARD Cork Gaskets and Felt Washers Contains 561 Pieces

No. 3 DISPLAY BOARDS The Universal Washer Board Contains 378 Pieces-82 Different Sizes



Nos. 1 and 2 Display Board



No. 3 Display Board

Each part held securely by new improved clips. Individual parts removable instantly without disturbing remainder on clips. Part numbers visible at all times. You buy the best grade of Felt and Cork on these Boards—the only tested line being offered.

	NO.	DISPLAY B	OARD	
Pieces	Material	Part	Consumer's	
		Number	Price	Total
50	Felt	2510-B	\$0.05 each	\$2.50
25	Felt	2580	.05 each	1.25
100	Felt	2809	.05 each	5.00
6	Felt	3012	.05 each	.30
25	Felt	3070	.10 each	2.50
25	Felt	3071	.10 each	2.50
25	Felt	3102	.15 each	3.75
50	Felt	3111	.05 pair	1.25
6	Felt	3177-New	.05 each	.30
25	Felt	3279	.05 each	1.25
25	Felt	3363-L	.05 each	1.25 3.75
50	Felt	3377	.15 pair	3.75
25	Felt	3379	.05 each	1.25
25	Felt	3381	.05 each	1.25
6	Felt	3544	.05 each	.30
18	Felt	Grease Ret.	.25 each	4.50
25	Packing	5056	.05 each	1.25
50	Paper	5057	.05 each	2.50
-				
561	1		1	
VALU	L SALE	S VALUE		\$36.65 7.00
LIST	PRICE	COUNT	\$20.50	\$43.65
DE.	ALER'S	COST		14.35
PR	OFIT			\$29.30

" 2

No. 1 Display Board Each

Size of Boards 19x48". Packed in individual cartons.

Shipping weight approximately 13 lbs. 25 Sets plus 18 Special Grease Retainers and 100 Starter parts. The Advance Line means Better Merchan-disc.

Pieces	Material	Part	Consumer's	
		Number	Price	Total
25	Cork	2580	\$0.10 each	\$2.50
25	Cork	3070	.15 each	3.75
25	Cork	3071	.15 each	3.75
25	Cork	3102	.20 each	
50	Cork	3111	.10 pair	2.50
25	Cork	3279	.05 each	
25	Cork	3363-L	.05 each	1.25
50	Cork	3377	.15 each	
25	Cork	3379	.15 each	3.75
25	Cork	3381 2510-B	.10 each	2.50
50	Felt		.05 each	2.50
100	Felt	2809	.05 each	
6	Felt	3012	.05 each	
6	Felt	3177-New		
6	Felt	3544	.05 each	.30
18	Felt	Grease Ret.		
25	Packing	5056	.05 each	
50	Paper	5057	.05 each	2.5
561				
		S VALUE		
VAL	UE OF BO	)ARD		7.00
LIST	PRICE	COUNT	\$25.50	\$57.40
LESS	30% DIS	COUNT	7.65	
DE	ALER'S C	OST		\$17.8
PR	OFIT			\$29.50

You do not have to send to the factory for a Felt Washer or attempt to cut one your-self.

No.	NO. 3 DISPLAY E	Consumer's	
Pieces	Washers	Price	Total
90	1½, 1¾, 2 and 2¼ O. D. ¼" thick 2½ and 2¾ O. D. ½"	\$0.05 each	\$4.50
60	thick	.10 each	6.00
28	114 and 134 O. D. 1/2" thick	.05 each	1.40
52	2, 2¼ and 2½ O. D. ½" thick	.10 each	5.20
52 28 68	2¾ and 3 O. D. ½" thick 3¼ O. D. ½" thick	.15 each .20 each	
68	3½ and 3% O. D. ½"	.25 each	17.00
378			
VAL	ES VALUE UE OF BOARD PRICE		7.00
	30% DISCOUNT	7.50	
LESS	,	District Street, Street,	
	ALER'S COST		
DE			\$17.50
DE	ALER'S COST		\$17.50
DE	ALER'S COST OFIT (108%)		\$17.50
DE	ALER'S COST		\$17.50
DE PR	ALER'S COST OFIT (108%)		\$17.50

# GARCO

## Asbestos Brake Lining



GARCO Asbestos Brake Lining is solidly and closely woven from high grade, long fiber asbestos, spun about fine wires. It has a compact and smooth surface which conforms readily to the Brake Band and at the same time gives the utmost in frictional contact. Its density makes secure riveting to the band a certainty. Due to the special GARCO treatment, it is not affected by oil, grease, water or dirt. In short-GARCO'S quality and dependability mean repeat business for the dealer and safety for the driver.

### STANDARD PRICE LIST Per Lineal Foot

Width			- Thickness,	Inches		
Inches	1/8	5/32	8/16	1/4	5/16	36
1	\$0 40	\$0 45	\$0 50	\$0 70	\$0 83	\$0 96
11/8	. 45	50	55	75	92	1 06
11/2	50	55	60	80	98	1 16
1%	60	65	70	90	1 13	1 35
134	70	75	80	1 00	1 27	1 54
2	80	85	90	1 20	1 47	1 73
214	90	95	1 00	1 30	1 62	1 93
114	1 00	1 05	1 10	1 50	1 81	2 12
214	1 10	1 15	1 20	1 60	1 96	2 31
3	1 20	1 15	1 80	1 70	2 10	2 50
314	1 25	1 33	1 40	1 80	2 25	2 69
314	1 30	1 40	1 50	1 90	2 39	2 88
074	1 35	1 48	1 60	2 05	2 57	3 08
in	1 40	1 55	1 70	2 20	2 74	3 27
114	1 50	1 65	1 80	2 35	2 91	3 46
414	1 60	1 75	1 90	2 50	3 08	3 65
5	1 70 1 80	1 85	2 00	2 60	3 23	3 85
514	2 00	1 95 2 15	2 10	2 70	3 87	4 04
6	2 20	2 35	2 80 2 50	3 01 3 27	3 72	4 42
	2 20	2 00	2 00	0 21	4 04	4 80



This attractive steel display cabinet is furnished free to dealers with reasonable initial stock orders for GARCO Brake Band Lining. Ask for complete information.

506 P. C. Roll Lots, 602 P. C. 300-ft. Lots 603 and 108 P. C.

### GARCO TRANSMISSION SETS FOR FORDS.



Garco Ford Lining is strong, tough and durable. It is a high-grade quality product that has a record of un-equalled wearing ability and efficiency. It is thoroughly impregnated with a special Garco Compound which adds greatly to its life and efficiency. Furnished in boxes containing three pieces of lining 23½ inches long, 1½ inches 

#### ADVANCE CORK INSERT TRANSMISSION LININGS.



Cork Insert holds with the slightest pressure. Gives a positive brake without a trace of grab, slip or chatter. The Ford glides to a stop, just like the most expensive car, instead of stopping in a series of jerks and jumps.

Wears for thousands of miles-outwears three sets of any other lining.

Dozen sets contained in colored display carton. Price, per set, with rivets..... 254 P. C. Doz. Set Lots, 337 P. C.

### ADVANCE WHITE STRIPE TRANSMISSION LININGS.



Woven and treated especially for longest wear in the Ford transmission.

Is made from "fire hose cord," highest grade, long wearing cotton yarn, costing twice as much as yarns from which ordinary linings are made. Contains 20 per cent more and better cotton than any other lining and 50 per cent more than most. Will not pack down and get thin.

The special weave, exclusive with White Stripe, protects

the framework of the fabric from wear. Framework threads are never exposed to surface wear. Wears to the last thread. Shipped in colored display cartons containing I dozen sets.

 Price, per set, with rivets.
 \$2.00

 Price, in rolls of 50 or 100 ft. Per ft.
 29

256 P. C. Doz. Set Lots, 330 P. C.

#### SMOOTH GRIP TRANSMISSION LININGS.

A white cotton lining, in regulation length strips. No box or rivets. Price, per set (3 pieces) .......327 \$0.55 PEERLESS WHITE TRANSMISSION LINING.



In rolls of 50 feet. Price, per foot .... 51/24 \$0.10

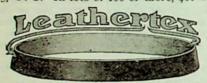
### L. & L. ONE-PIECE SLIP ON TRANSMISSION LININGS.



For Ford Cars.

Comes in one piece instead of three, eliminates the use of rivets, and will prevent it from cutting into the planetary drums and wearing them out. Also prevents the chattering noises. You can rechange this lining in 30 minutes without removing the transmission cover. Full directions on each box.

Price, each. 337 P. C. In lots of 100 or more, 401 P. C. \$3.00



### Cone Clutch Facings

Leathertex is a combination of carefully selected, specially tanned leather, and textile-really merged into one element under 3,000 lbs. hydraulic pressure-with a leather face for the clutch, and a textile back next to the cone. 

#### GARCO SOLIDLY WOVEN CLUTCH FACINGS.





Cone.

Disc.

The same high-grade materials used in the construction of GARCO Brake Lining are used in GARCO Asbestos Clutch Facings. They are solidly woven and of a quality that insures long and efficient service. When ordering always give dimensions and car on which used.

	List Price		List Price
Size Disc	Per Ring	Size Disc	Per Ring
5%x318x1/s		*83/8x63/8x32	\$1.02
518x4x1/8		*87 x61/4x 32	1.17
6%x4%x.140145	81	*9x63/4x1/8	1.09
65/8x51/8x1/8	76		1.06
614x532x1/8	78	95/8x73/8x1/8	1.17
	89	#97/sx67/sx1/s	1.42
	94	10x71/2x32	1.40
		103/4 x7x 32	1.96
71/8×53/8×1/8		103/4x91/4x1/8	1.07
8x6x1/s		1112x8x1/s	2.16
*8x6x \$2		.*117/8x83/8x1/8	1.88
*8x6x22		12x8½x½	1.92
8x6x 12		12% x91/2x12	2.24
81 x 61 x 1/8	90	12 12 x9x1/s	2.35
Sie Adie A stook	izec other s	izes from factory	

Packed in attractive boxes containing 20 facings each. 401 P. C.; Box Lots, 553 P. C.

HOOD LACING.



Anti-Squeak Materials.

The exterior is treated with a special preparation and is fire-proof. This fire-proofing causes it to be admirably adapted to withstand friction and the heat of the hood.

		H	ood ]	Laci	ng.		
	1/4-in.,						Body Cushion.
	3/8-in.,	per	roll,	100	ft	4.85	1 -in., per roll, 100 ft \$10.8)
	1/2-in.,	per	roll,	100	ft	5.40	11/4-in., per roll, 100 ft 12.15
							1½-in., per roll, 100 ft 13.50
							13/4-in., per roll, 100 ft 14.85
1	-in.,	per	roll,	100	ft	9.45	2 -in., per roll, 100 ft 16.20
		-	-				106 P. C.

RED CUP TRANSMISSION LUBRICATORS.



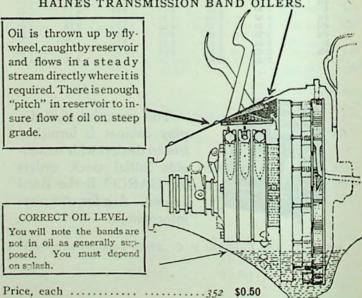
Price, compound



For Ford Cars.

Feeds correct portion of compound to brake. Feeds low and reverse speed bands. One turn of key at intervals of about 100 miles releases sufficient compound to thoroughly impregnate bands. Compound makes bands soft and free from glaze. Will stop chatter. Price, filled with compound, each ....

254 P. C.; Doz. Lots, 337 P. C. HAINES TRANSMISSION BAND OILERS.



Price, each, in 100 lots. .....307

### PLEASURE AND COMMERCIAL CAR BRAKE LINING DATA.

				AND	COMMERCIAL	CAR BRAKE LIN					
	—Size	of Bra	ke-	No.			-	of Brak ining	e	No.	
Car Model Year		Thick-	Lgth.	of	Type of	Car Model Year		Thick- I	gth.	of	Type of
111777	01/	ness		Pcs.	Brake	A Labor Monale III	13/	ness		Pcs.	Brake
Abbott 8-80 Abbott 8-80		10 10	50 54	2 2	Internal External	Armleder Truck H Armleder Truck H W		16	36	2	Jackshaft
Abbott 6-44	. 13/4	130	36 36	2 2	Internal External	1917		1/4	12	8	Internal
Abbott 6-44	. 2	re	30	-	External	Armleder Truck K W 1917		1/4	131/2	8	Internal '
Acme Truck A F		1,	40	, rie		Armleder Truck E W 1917		1/4	131/2	0	
Acme Truck B F		1/4	48	4	Internal	Armleder 20, 1920			$11\frac{1}{2}$	8	Internal Int. & Ext.
1916	31/4	1/4	48	4	Internal	Armleder HW2½, 1916-20	31/2	1/4	131/4	4	Int. & Ext.
Acme Truck A1918. Acme Truck B1918.		1/4	52 48	4	Internal Internal	Armleder KW, 1918.		* *	151/2	8	Expanding
Acme Truck C1918.	. 33/4	1/4	62	4	Internal	Armleder KW, 3½-1916-20	3	3	42	1	External
Acme Truck D1918. Acme Truck A2		1/4	72 13	4	Internal Int. & Ext.	Armleder					STATE OF THE PARTY OF
Acme Truck B1		1/4	12 62	4 4	Int. & Ext. Internal	KW, 3½-1916-20 Armleder E-C			16 21	8	Internal Internal
Acme Truck 1919 Acme Truck C3½			02	. 1	Titternar						
1917-20 Acme Truck, D1918		1/4	$\frac{15\frac{1}{2}}{72}$	4	Int. & Ext. Internal	Atlantic Truck, 1-C, 2-C	93/.	1/4	16	2	Wheel
Acme Truck E1919.		1/4	72	4	Internal	Atlantic Truck, 1-C,	274	74	16	2	Wheel
Acme Truck E5, 1919-20	4	1/4	18	4	Int. & Ext.	2-C	2	1/4	29	1	Differential
Acme Truck F1919.	. 31/4	1/4	48	4	Internal	Atlantic Truck, 3½ C	31/2	1/4	54	2	Wheel
Acme Truck F1½ 1919-20	31/2	1/4	12	4	Int. & Ext.	Atlantic Truck, 5-C, 6-C, 6½C		1/4	15	1	Differential
	-				Contract Stell	Atlantic Truck, 5-C,			-		Dinerential
Allen 32, 1917 Allen 32, 1917	. 13/4	32	343/4	2 2	Internal External	6-C, 6½C Atlantic Truck, 5-C,		1/4 3	58	2	Wheel
Allen 34	. 1 1/8	32	361/2	2	Internal	6-C, 6½C		1/4	55	1	Differential
Allen 34	13/4	32 32	351/2 343/4	2 2	External Internal	in the same of the	21				an record
Allen 37, 1917	. 2	32	343/4	2	External	Atlas Truck 18 Atlas Truck 18			35 35	2 2	Internal External
Allen 41, 1918 Allen 41, 1918	. 13/4	32 32	343/4	2 2	Internal External	Atlas Truck 10		32		~	Laternar
Allen 43, 1919	. 13/4	5 32	34		Internal	Atterbury Truck B		1/			-0,0192
Allen 43, 1919 Allen 43, 1920	. 13/4	32 ·	383/s 383/s		External External	W 1 ton 1915 Atterbury Truck B		1/4	18	2	Internal
Allen 43, 1920		32 32	341/2		Internal	W 1 ton 1915	21/2	1/4	191/2	2	External
American 6-A 1917	2	3 16	42	2	Internal	W 2 ton 1915		1/4 4	191/2	2	Internal
American 6-A 6-B			1716.		The same of the same of	Atterbury Truck C		1/ :	1	0	Putamal
1917-18 American B1919		16 16	44	2	External Internal	W 2 ton 1915 Atterbury Truck D	272	1/4 5	1	2	External
American B1919	. 2	130	45		External	W 3 ton 1915	31/4	1/4 4	91/2	4	Internal
American C6, 1920 American C6, 1920	. 2	10 10	43 42	1	External Internal	Atterbury Truck 6 B 1 ton, 6 R1½ ton,					
Asia-Lot	. 2	16	12		Internal	1 ton, 6 R1½ ton, 1916	31/4	1/4 1	2	8	IntExp.
American Beauty— 6-48 E	. 21/2	1/4	24	2	Ext. Cont.	Atterbury Truck 6 C, 2 ton, 1916	31/4	1/4 1	2	8	IntExp.
6-48 F	. 21/2	1/4	24	2	Int. Expand.	Atterbury Truck 6 D			318	8	IntExp.
6-48 G 6-55 E, F, G, 1920.	. 2 1/2	1/4 15g	24 44	2	Int. Expand. External	3½ ton 1916 Atterbury Truck 5 R					
6-55 E, F, G, 1920.	. 3	16	40		Internal.	11/2 ton, 7C 2 ton	21/		0.3		T
Apperson 4-40, 6-]	21/4	r <sup>3</sup> o	40	2 '	External	1917 Atterbury Truck 7 D	3/2	1/4 1	318	8	IntExp.
46, 1915 6-48, 8-58, 1916	21/4	3	40	2	Internal	3½ ton, 1917-20	3¾	1/4 1	5%	8	IntExp.
Apperson, After First		16	10			Atterbury Truck 7 R, 1918	31/2	1/4 1	318	8	Internal
1400 Cars: 6-48, 8-58, 1916	2	1 <sup>3</sup> c	46	2	Internal	Atterbury Truck 7R,					
6-17, 8-17, 1917	. 21/4	10	4915	2	External	1918 Atterbury—	372	1/4 1	318	8	External
8-18, 1918 8-18-A, 8-19 and 8-20		r <sup>3</sup> c	46	2	Internal	7Cx21/2 ton, 1919-	21/	1/ 1	0.3		T
8-18-A, 8-19 and 8-20		16 16	49 7	2	External	20 8E, 5 ton, 1919-20					Int. & Ext. Int. & Ext.
8-20, 1920		76 3.	48½ 44¾	2 2	External Internal	20R, 1½ ton, 1920.	- 4 4				Int. & Ext.
8-20, 1920 8-21, 1921		Te Te	481/2	2	External	Auburn 640 1015					
8-21, 1921		16	44%	2	Internal	Auburn 6-40, 1915, 6-40A, 1916	11/2	ra 4			Internal
Armleder Truck E C		1/4	21		Internal	Auburn 6-40A, 1916	2				External
Armleder Truck H C		13 3	18 32	4 2	Internal Jackshaft	Auburn 6-38 1916 Auburn 6-38, 1916	2				Internal External
Armleder Truck E.		13g	57		Internal	Auburn 6-44, 1917	1%	ra 4	9	2	Internal
Armleder Truck B.	. 2	10	48	2	Jackshaft	Auburn 6-44, 1917		ra 4	4	2	External
Armleder Truck B.		13g	18 18	4	Internal Internal	Auburn 6-39, 1917, 6-39B, 1918	1%	ris 4	21/2	2	Internal
The state of the s	-		-								

-Siz	e of Brake-			-Siz	e of Br	ake-		
	Lining	No.			Lining		No.	
Car Model Year Wdth.	Thick-Lgth.	of	Type of	Car Model Year Wdth		Lgth.	of	Type of Brake
	ness	Pcs.	Brake	Bathlaham Tauah B	ness		Pcs.	Diake
Auburn 6-39, 1917, 6-39B, 1918 2	re 42½	2	External	Bethlehem Truck E- 1, 1918 3	136	501/2	2	External
Auburn 6-39, 1919 134	n 40		Internal	Bethlehem Truck F-	10			
Auburn 6-39, 1919 2	16 421/2		External	1, 1918 2	16	511/2	2	Internal
Auburn 6-39, 1920 2	13 431/2		External	Bethlehem Truck F-	.3.	54	2	External
Auburn 6-39, 1920 2	fig 41%		Internal	1, 1918 3 <sup>1</sup> / <sub>4</sub> Ton A, 1919 1 <sup>3</sup> / <sub>4</sub>	16 3 16	401		Internal
Autocar Truck, 1915-				11/4 Ton A, 1919 21/2	3	43		External
1918 21-2	32 13	4	Internal	1½ Ton D, 1919 1¾	736	401/8		Internal
Autocar Truck, 1915-				1½ Ton D, 1919 2½	16	43 50		External Internal
1918 21-2	a 161/4	4	External	2¼ Ton B, 1919 2 2¼ Ton B, 1919 3	16	55		External
Autocar Truck U B	1/4 16	4	Internal	2½ Ton E, 1919 2	3 16	49		Internal
Autocar Truck U B				2½ Ton E, 1919 3	16	51		External
19162	1/4 14	4	External	3½ Ton F, 1919 2 3½ Ton F, 1919 3	16 16	50 55		Internal External
Autocar Truck XX	5 13	4	Internal	% Ton K, 1920 2	16	49	1	External
I-F 2 ton 1917-20. 21/2 Autocar Truck XX	32 10	-	Tiree Titte	3/4 Ton K, 1920 2	78	21	2	Internal
I-F 2 ton 1917-20. 21/2	52 161/4	4	External	1½ Ton G, 1920 2½	16	43	1	External
				1½ Ton G, 1920 1¾ 2½ Ton H, 1920 3	16 3 16	51	2	Internal External
Available Truck 1-2-				2½ Ton H, 1920 2	16 16	49	2	Internal
Available 1-2-3-5 tons			Zant dante.	3½ Ton J, 1920 3	16	55	1	External
Available 2 ton H2 31/2	1/4 131/2		Internal	3½ Ton J, 1920 2	n'e	50	2	Internal
Available	i 58		Internal	Biddle C & D 1915-				
2½ ton H2½ 2½ 2½ ton H2½ 2½	16 58 16 43		Internal Internal	16-17 13/4	30	36	2	Internal
3 Ton H3 21/2	3 58		Internal	Biddle C & D 1915-				
3 Ton H3 21/2	3 43		Internal	16-17 2	32	43	2	External
3½ Ton H3½ 3¾	1/4 16		Internal	Biddle H, 1917 1	16	17% 17%	4	Internal External
5 Ton H5 4 H1½, 1920 214	1/4 18 1/4 48	2	Internal External	Biddle H, 1917 1 B1-B5, 1920 2	1/8	44		External
H1½, 1920 2½	14 36	2	Internal	B1-B5, 1920 2	1/8	17		Internal
H2½, 1916-20 3½	1/4 131/2	4	Int. & Ext.		-	00	0	T
Н3, 1916-20 3%	1/4 16	4	Int. & Ext.	Briscoe 4-38, 1915-16 1½	16	30 311/4	2 2	Internal External
H5, 1916-20 4 H7, 1919-20 31/2	1/4 18 1/4 72	4 2	Int. & Ext. Int. & Ext.	Briscoe 4-38, 1915-16 1½ Briscoe 8-38, 1915-16 1½	16 16	30	2	Internal
11, 1919-20			The ce Line.	Briscoe 8-38, 1915-16 11/2	re	311/4	2	External
Avery Truck 1 ton			of the second	Briscoe 4-24, 1916-17-	-	0=5/		T
Avery Truck 1 ton 2	1/4 36	2	Jackshaft	18	32	275/s	2	Internal
Avery Truck 2-3-5 ton	1/4 50	2	Rear Wheel	Briscoe 4-24, 1916-17- 18	32	275/8	2	External
Avery Truck 2-3-5	,4 00			Briscoe Truck T-4,		70	124	
ton 214	1/4 17	4	Jackshaft	1914-15-16-17-18 2	32	93/4	-4	Internal
Destan Tours 3/ Ton				Briscoe Truck T-4,	.5.	275/8	2	External
Barker Truck ¾ Ton V-1916-17 3	1/4 25	4	Rear Wheel	1914-15-16-17-18 1½ B4-24, 1919 1½	32 32	27%		Internal
Barker Truck 1 Ton	,,	-		B4-24, 1919 1½	52	27%		External
V-1916-17 2	1/4 24 1/8	4	Dbl. Internal	4-34, 1920 2	d'i	29		External
Barker Truck 2 Ton	1/4 487/8	4	Dbl. Internal	4-34, 1920 2	61	211/2		Internal
V-1916-17 214 Barker Truck 2 Ton	½ 48%	1	Doi, Internal	Brockway Truck-				
V-1916-17 3	re 46 re		Internal	Н 21/2	16	42	2	Internal
W10, 1917 3	1/4 46 %		External	Н 2¾	1/2	44	2	External
W10, 1917 3	76 46 76 1/4 49 %		Internal	J 3 J 3	18 18	48 48	$\frac{2}{2}$	Internal External
W21, 1917 2 <sup>1</sup> / <sub>4</sub>	74 4978	4	Internal	K 3	16	48	2	Internal
Bessemer Truck ¾				K 3	136	48	2	External .
ton 2	re 44	2	Internal	J2 2	76	46	4	Internal
Bessemer Truck ¾	3 42	- 2	External	K2 2¼ K3 3¾	rk ře	52 12	8	Internal Internal
(011	16 42	-	LACCINAL	K4 3%	16 16	12	8	Internal
Bethlehem Truck A-1,				0 2	136	20	8	Internal
1917	16 41½	2	Internal	R 3¾	16	15%	8	Internal
Bethlehem Truck A-1, 191721/2	n 411/2	2	External	S 2 T 4	16 16	20 18	8	Internal Internal
Bethlehem Truck B-1,	10 11/2		17ACCIMII	S2 1½, 1919-20 2	16	20	4	Int. & Ext.
19172	re 511/2	2	Internal					
Bethlehem Truck B-1,	3	77	P	Buick C24-C25,-15 1%	32	35 18	2	Internal
1917 3	n 54	2	External	Buick C24-C25,-15 1% Buick C36-C37,-15 1%	32	37 15 40 16	2 2	External Internal
Bethlehem Truck D- 1, 1918	fe 411/2	. 2	Internal	Buick C36-C37,-15 178	32 32	425	2	External
Bethlehem Truck D-			III The Marine	Buick C54-C55,-15 1%	10	461/2	2	Internal
1, 1918 21/2	To 411/2	: 2	External	Buick C54-C55,-15 2%		49 32	2	External
Bethlehem Truck E	is 46%	2	Internal	Buick D44-45-46-47, 1916-17 1 1 1 1 1 1 1 1 1 1 1 1 1		25	0.	Internal
1, 1918 2	Te 46%	. 2	meernar	1010-17 17/8	nh	35	2	Internal

				CON	IMERCIAL CAR	BRAKE LIMING DA	-Size o				
	Si	ze of Brak	e-	No				ning	e	No.	
Car Model Year	Wdt	Lining h. Thick-	Lgth.	No.	Type of	Car Model Year W			gth.	of	Type of
Cur Mouer real		ness		Pcs.	Brake			iess		Pcs.	Brake
Buick D44-45-46-47	,					Case R25, 1915 1		*	10½	2	Internal
1916-17	. 17/8	2	381/8	2	External	Case R25, 1915			10%	2	External
Buick D54-55		Te 3	461/2	2 2	Internal	Case T40, 1916 I	17/8		101/8 107/8	2	Internal External
Buick D54-55 Buick D-34, D-35		18	49%	-	External	Case T40, 1917 2			10%	2 2	Internal
1917	13/8	32	29	2	Internal	Case T40, 1917 2	2		14 %	2	External
Buick D-34, D-35	,		and a "								
1917		32	273/4	2	External	Case— U, 1918 1	13/.	da e	10	1	Internal
Buick E-44, E-45, E		.5_	25	2	Internal	U, 1918	2		45	i	External
46, E-47, 1918 Buick E-44, E-45, E		32	35	-	Internal	U, 1919 1	13/4		10	1	Internal
46, E-47, 1918	1	32	381/8	2	External	U, 1919 2	2	32 4	15	1	External
Buick E-49, E-50, 1913		52	4018	2	Internal	V, 1920	21/2	-			External
Buick E-49, E-50, 191		32	43 %	2	External	V, 1920 2	21/4	32 4	161/2		Internal
Buick E-4, E-34, E-35		5 .	00		Andrew Profit	Chalmers 26B '15. 2	218	i'd .	131/2		Service
1918		32	29	2	Internal	Chalmers 26B, '15 1	. 1 .		4491		Emergency
Buick E-4, E-34, E-35 1918	15%	3 <sup>5</sup> 2	273/4	2	External	Chalmers 29, 1915-16. 1	115		101/		Emergency
Buick Truck, 3 and		32	21 /4	150	Batterna	Chalmers 29, 1915-16. 2	216				Service
4 ton, 1914		32	3918	2	Internal	Chalmers 32A, '15 I	118				Emergency
Buick Truck, 3 and	d				3000 100	Chalmers 32A, '15 2	115		37 ±± 413/4	2	Service
4 ton, 1914		32	$42\frac{1}{2}$	2	External	Chalmers 26C, '16 1 Chalmers 26C, '16 2	23		131/2	2	Emergency Service
Buick Truck C,		5	2015	9	Internal	Chalmers 32B, '16 1	1 15		413/		Emergency
Buick Truck C,	1 1%	32	3918	2	Internal	Chalmers 32B, '16 2			131/2	2	Service
Ton, 1915	17/6	352	421/2	2	External	Chalmers 6-30, 16-17-					
Buick Truck, D.		32				5 Passenger	1%	16	351/4		Emergency
Ton, 1916-17	. 1%	32	3918	2	Internal	Chalmers 6-30, 16-17-	1 1.5	a.	37 3°		Service
Buick Truck, D,			101/		71	5 Passenger 1 Chalmers 6-30, 17-18-	116	18	37 16		Service
Ton, 1916-17	. 1%	32	421/2	2	External	7 Passenger	1 12	1 <sup>3</sup> c -	113/4	101	Emergency
Buick-					TOU WENT	Chalmers 6-30, 17-18-					
H, 1919 Models						7 Passenger 2	2 16	16	131/2		Service
H44, H45, H46						Chalmers 6-30, '18 5		2			
H47	. 1%	:12	35%	2	Internal	Passenger 1	1 1/2	re s	113/4		Emergency
H, 1919 Models						Chalmers 6-30, '18 5 Passenger 1	13/.	36. 4	131/2	2	Service
H44, H45, H46	12/	5	201/	9	External	Chalmers 6-30, '18 7	. /-	16-	10/2	-	Service
H47 H, 1919 Models		d2	381/4	2	External		218	16	131/2		Service
H49, H50		32	40 76	2	Internal	Chalmers 6-30, '18 7					
H, 1919 Models		3-				Passenger 1	1 13	ne s	113/4		Emergency
H49, H50	. 11/8	32	43%	2	External	Chalmers—	11/	3.	113/4		Internal
K, 1920 Models	s,					6-30, 1919 1 6-30, 1919 1			131/2		External
K44, K45, K46		5.	35%	2	Internal	C30, 5P			131/2		External
K47 K, 1920 Models		:12	0078	-	Internat	C30, 5P					Internal
K44, K45, K46	5.										
K47		ชื่อ	381/4	2	External	Chandler '16-17-18-19-	137	3	19	9	Internal
K, 1920 Models			7			20 1 Chandler '16-17-18-19-	174	i 4	13	2	internat
K49, K50		32	40 75	2	Internal	20 2	2	3 16 4	151%	2	External
K, 1920 Models K49, K50		352	43%	2	External	20					
K40, K00	. 178	32	10 /8		THE RELEASE OF THE PERSON OF T	Chase Truck S, '14 2		-	31		Emergency
Burford Truck 02	2,				BAR A	Chase Truck S, '14 2	2	re 3	31	1	Service
1916	. 3	1/4	718	2	External	Chase Truck 11/2 Ton	2	i 4	16 re	2	Internal
Burford Truck Di						C, 1917 3 Chase Truck 3 Ton	27	10 3	016	-	c. Har
1916						X, 1917 2	21/2	1/4 5	67/8	4	Internal
Burford Truck Da	21/	1/4	571/4	4	Dbl. Internal	Chase Truck 31/2					
Burford Truck 03		74	5. 74			D, '14-15-16-17 2	21/2	1/4 5	6%	4	Internal
1917		1/4	48	2	Internal	Chase Truck 2 Ton		11	0.0	0	Thus
· Interest of	3	1/4	718	2	External	R, 1914-15 3	5		616		External
Tell market						Chase Truck O, '15 3 Chase Truck O, '15 3			676	2 2	Internal External
"C. T." Commercia		.,	101/		Dear Wheel	Chase Truck R, '16 2			39%	2	Internal
Truck ½ T		1/4	121/2	4	Rear Wheel	Chase Truck R, '16 2	23/4		131/2	2	External
"C. T." Commercia		1/4	15	4	Rear Wheel	Chase Truck A-B-X				. 18	
"C. T." Commercia		74	10	-		Chase Truck 34 Ton					
Truck 2 T		1/4	18	4	Rear Wheel	Т. 1914-15-16-17 2		1 <sup>3</sup> c 1	8	8	Internal
Best Willes	HIT			LIBER	1 (0) 80 10 10	Chase Truck 1 Ton	,	a 1	9	9	Internal
Cadillac 1915-16 17-1		19	50	2	Internal	A, 1916-17 2		re 1	8	8	Internal
Cadillac 1915-16 17-1		16	54	2	External	Chevrolet 4-90, '16 1	11/4	5 2 2	61/2	2	Internal
1919-20 1919-20		16 3	51 54	2 2	Internal External	Chevrolet 4-90, '16 1			61/2		External
1920	21/2	18	-01/		External	Chevrolet 4-90, '17-18-					
1920	21/4	16 7k	49		Internal	19 1	1/4 :	d'a 2	261/2	2	Internal

			COM	MERCIAL CA	R DRAKE LINING DA	-				
-51	ze of Bra		No.			—Size o	ning		No.	
Car Model Year Wdt			of	Type of	Car Model Year	Wdth. T	hick- L	gth.	of	Type of
	ness		Pcs.	Brake			ness		Pcs.	Brake
Chevrolet 4-90, '17-18-					G2½, 1920		1 5	5	2	External
19 11/4	2,5	271/2	2	External	G2½, 1920			0	2	Internal
Chevrolet FA-D 1917-	.5.	341/2	2	Internal	F1, 1919-20 F1, 4919-20		22	$\frac{9\frac{1}{4}}{0\frac{1}{2}}$	2 2	Internal External
18 1% Chevrolet FA-D 1917-	2,5	3472	-	Internal	20C, D, E, CS, H,		16 4	072	2	Lixternar
18 13/4	32	37 18	2	External	1920	13/4	16 4	4		External
Chevrolet FB, 1919 134	32	341/2	2	Internal	20C, D, E, CS, H,			. 2/		
Chevrolet FB, 1919 1%	2,5	3718	2	External	1920	1/2	16 4	13/4	• •	Internal
Chevrolet Truck T	re re	15 %	8	Internal	Daniels Eight A,					
1910-19	16	1016	0	Internal	1915-16-17	21/2	13 4	31/2	2	Internal
Cleveland-		00			В, 1917-18-19	21/2		81/2	2	External
40, 1920 2	32	38		External	8D, 1920			31/2		Internal
40, 1920 1 <sup>1</sup> / <sub>2</sub> Cleveland Tractor 2	2 32 16	21% 20	i	Internal Emergency	8D, 1920	272	rb 4	181/2		External
Cleveland Tractor 2	75-	25	2	Steering	Dort Truck C C4					
					Dart Truck C-C4 Dart Truck E					
Clydesdale Truck 30,	1/	27	0	Tutamal	Dart Truck L, 1918			6	8	Internal
1918 2½	2 1/4	37	2	Internal	Dart Truck CC4,					
Clydesdale Truck 30, 191821/	2 1/4	38	2	External	1918	31/2		2	8	Internal
Clydesdale Truck 45,	- /4	00	- 21	AST AMOUNT	Dart Truck E, '18			2	8	Internal
1917-18 35	4 1/4	12	8	Int. Exp.	СН, 1918			3	4	Internal
Clydesdale Truck 65,					1 Ton, 1919 2 Ton, 1919			$\frac{2}{3\frac{1}{2}}$		Internal Internal
1917-18 3½	4 1/4	12	8	Int. Exp.	3½ Ton, 1919			6		Internal
Clydesdale Truck 90,	, 1/	191/	-0	Tot Pos	Н1, 1920			19	4	External
1917-18 3 <sup>1</sup> / Clydesdale Truck 120,	2 1/4	131/2	- 8	Int. Exp.	H1, 1920			19	4	Internal
1917-18 4	1/4	18	8	Int. Exp.	S1½, 1920			19	4	External
30, 1918 21		37	2	Internal	S1½, 1920			19	4	Internal
30, 1918 21		38	2	External	M2½, 1920 M2½, 1920	21/2		10 19	2 4	Internal External
1 Ton, 32X, 1919-					W3½, 1920	23/4		28	4	Internal
20 13	4 1/4	20	4	Int. & Ext.	W3½, 1920			28	4	External
1½ Ton, 42, 1919-	4 1/4	12	4	Int. & Ext.	, , , , , , , , , , , , , , , , , , , ,					
20	4 /4	12	-1	Int. & Lat.	Dayton Truck U,	,				
20	/2 1/4	131/4	4	Int. & Ext.	Dayton Truck U, 1915	21/2	1/4 3	32	2	Internal
3½ Ton, 90, 1919-					Dayton Truck U, 1915	,	.,			Market 1
20 3	4 1/4	16	4	Int. & Ext.	1915	3	1/4 4	17	2	External
5 Ton, 120B, 1919-	1/	10		Int & Dat	Dayton Truck A 1915-16		1/4 3	37	2	Internal
20 4	1/4	18	4	Int. & Ext.	Dayton Truck A		/4	01	2	Internal
Cole 4-40, 8-50, '15-16. 2	re	433/4	2	Service	1915-16	31/2	1/4	55	2	External
Cole 4-40, 8-50, '15-16. 2	18			Emergency	Dayton Truck E	,				
Cole Series 30001,					1915-16	. 3	1/4	13	2	Internal
860-61-62-63, '16 1	14 32	43 1	2	Emergency	Dayton Truck E		1/	00		KAT
Cole Series 30001,	5	45		C	1915-16	. 4	1/4	60	2	External
860-61-62-63, '16 2	32	45	2	Service	Denby-					
Cole Series 40001, 860-61-62-63-64-65-66-					12, 1917-20, Int	. 13/4	3	391/2	1	Exp.
67, 1917 1	3/4 3/2	431	2	Emergency	12, 1917-20, Ext.			431/2	1	Cont.
Cole Series 40001,		4			13, 1918-20 Int			47	1	Exp.
860 -61-62-63-64-65-66-			-		13, 1918-20, Ext.		-	511/4	1	Cont.
67, 1917 2	32		2	Service	25, 1918-20, Int			51	1	Exp.
8-60, 8-70, 1917-18 1				Emergency	25, 1918-20, Ext. 27, 1918-20, Int			55¾ 58	1	Cont. Exp.
8-60, 8-70, 1917-18 2			1	Service Internal	27, 1918-20, Ext.			611/2	1	Cont.
8-7, 1919 2 8-7, 1919 2			8	External	210, 1919-20, Int			89	2	Exp.
01, 1010 111111111111111111111111111111	32			THE Y	12-1, 1920			431/2	1	External
Columbia 6-A 5 Pas-	200		1	5 FREET SPAT	12-1, 1920		16	$39\frac{1}{2}$	1	Internal
senger, 1917 1	1/2 1	413	4 2	Internal	134-2, 1920		16	511/4	1	External
Columbia 6-A 5 Pas-	2/ 2			P. c.	134-2, 1920 25-3, 1920		1°6	47 553/.	1	Internal
senger, 1917 1	% r	44	2	External	25-3, 1920	. 2	16	55¾ 51	1	External Internal
Columbia B6, 4 Pas-	3/4 1	44	2	Internal	27-4, 1920		16 16	611/2		External
Senger, 1917 I Columbia B6, 4 Pas-	/4 1	. 11	-	Internal	27-4, 1920		1/4	81/2		Internal
senger, 1917 1	1/2 1	413	4 2	External	210-5, 1920		You You	89	1	External
Model E, 1917 3	ri i		2	External	210-5, 1920	. 4	1/4	81/2	2	Internal
Model E, 1917 2			2	Internal	Determine The second					
Model E, 1919, 2				Total Control	Detroit Electric 5		2			TO SHEET
Ton	Y	56		Internal	57-58-59-60, 1916 Detroit Electric 6		To	471/2	2	Rear Wheel
Model E, 1919, 2	1/2 1	57		External	63-64-65-66, 1917		ra re	183/4	4	Internal
Model E, 1919, Pas-	/2 1	. 01	190	A Contact	Detroit Electric 6	8-	16	1074	4	Internal
senger 1	1/2 1	413	1/4	Internal	69, 1917		r <sup>3</sup> e	161/2	4	Internal
Model E, 1919, Pas-					Detroit Electric 7	0-	1			(-0.01
senger	194	44		External	71-72-73-74, 1918	21/2	1°E	183/4	4	Internal

	PLEA	SURE	AND	COL	MMERCIAL CA	R BRAKE LINING					
	-Size	of Bra	ke-				-Size	of Bra	ke		
		Lining		No.				Lining		No.	
Car Model Year			Lgth.	of	Type of	Car Model Year	Wdth.	Thick-	Lgth.	of	Type of
		ness		Pcs.	Brake			ness		Pcs.	Brake
		11033		1 00.	2.4	1 11 1010	15/	5	0.5	0	Testament
Detroit Electric 75-					THE BUREAU	8 and 11, 1918	178	32	35	2	Internal
76, 1918	2	16	161/4	4	Internal	Model 11, 1919		Y6	35%		Internal
Detroit Electric 75-						Model 11, 1919		16	35%		External
76, 1918	13/4	TG.	1211	2	External	10 and 15, 1920	1%	32	35%		Internal
					Desir Dairy Land	10 and 15, 1920	1%	32	35%		External
Detroiter 4, 8	11/2	1'G	12	4	Rear Wheel						
						Duplex 4 Wheel	011				D
Diamond T Truck						Drive T. B, 1914		14	56	2	Rear Wheel
L-R-J3-J4-J5						Duplex 4 Wheel		1/4	57	2	Rear Wheel
1 Ton Model J5,					The state of the s	Drive T. CD, '15					
1919	31/4	1/4	$12\frac{1}{2}$		Internal	Duplex 4 Wheel					
11/2 Ton Model J4,						Drive T. G, 1916		1/4	57	2	Rear Wheel
1919	31/2	1/4	131/4		Internal	Duplex Truck C,					
11/2 Ton Model F						Duplex Truck C, 1916	21/2	1/4	7	2	External
& F, 1919		1/4	131/4		Internal	Duplex Truck C,	- /~				
2 Ton Model J3				LE NO		Duplex Truck C, 1916	21/2	1/4	52	2	External
1919	31/2	1/4	131/4		Internal	Dalam Tanak D	2/2	/4	02	~	LAKCTHAI
3½ Ton Model L		/-1		1970	THE RESERVE OF THE PARTY OF THE	Duplex Truck D, 1916	91/	1/	7	4	External
В, 1919	23/	1/4	16		Internal	1916	272	1/4	7	4	Externar
Ton Model D	074	14	10	. (11)	THE PERSON NAMED IN	Duplex Truck E, 1917	211	11	01/	0	7 1 1 1
5 Ton Model R,		1/	101/		Internal	1917	21/2	1/4	91/2	2	External
1919		1/4	181/2		Internal	Duplex Truck E,					
5 Ton Model		1/	101/		Tatamal	1917	21/2	1/4	52	2	External
Spec. S, 1919	1 10	1/4	181/2		Internal	B, 4 Wheel Drive					
TFS and T 1 1/2	,					1914	21/2	1/4	56	2	Rear Wheel
1920	31/2	1/4	131/4	8	Int. & Ext.	CD, 4 Wheel					
TU2, 1920	31/2	1/4	131/4	8	Int. & Ext.	Drive, 1915		1/4	57	2	Rear Wheel
TK3½, 1920	33/4	1/4	16	8	Int. & Ext.	G, 4 Wheel Drive					
TEL5, 1920		1/4	16	8	Int. & Ext.	1916	91/	1/4	57	2 .	Rear Wheel
TS5, 1920	1	1/4	181/2	8	Int. & Ext.			-	93/8		Internal
100, 1020					The state of the s	3½ Ton, 1919		1'6 5			The state of the s
Dodge, 1916	2	13	$16\frac{1}{2}$	4	Internal	3½ Ton, 1919	272	16	51%		External
Dodge, 1916	21/4	13c	423/4	2	External	E3½, 1920	2/2	1/4	91/2	2	External
Dodge, 1917	2	13c	161/2	4	Internal	E3½, 1920	21/2	1/4	51/2	2	Internal
Dodge, 1917	21/4	13	423/4	2	External	A, 1920	2			4	Int. & Ext.
1918	13/	Yb	143/8	4	Internal						
1918	01/		42	2	External	Elgin—			0-1/	^	
1918	13/	16		4	Internal	1916	2	32	351/4	2	Internal
½ Ton, 1917-20	174	16	143/4		The state of the s	1916		16	38	2	External -
½ Ton, 1917-20	2/4	Te .	191/4	2	External	1917	13/4	16	341/2	2	Internal
1919	. 1%	To	143/4		Internal	1917	2	16	351/2	2	External
1919	. 21/4	16	191/4		External	Н, 1918-19	13/4	32	35%	2	Internal
1920	21/4	16	191/4		External	Н, 1918-19		32	343/8	2	External
1920	. 13/4	15 16	143/4		Internal	K, 1919	134	32	39		Internal
					and the American	K, 1919	9	32	43%		External
Dorris-						K, 1920	9	32	437/8	and a	External
1914	21/0	30	141/2	8	Rear Wheel	K, 1920	13/	120	39		Internal
1914, 1500 lb. Truck	- 21/2	13	16	8	Rear Wheel	K, 1920	1/4	32	00		Internat
2 Ton, 1914	23/	1/4	18	- 4	Rear Wheel	Empire 50, '17-18	13/4	32	351/4	2	Internal
		1/4	6	4	Jackshaft	Empire 50, '17-18	13/	32	371/2		External
2 Ton, 1914		74	U	-	Jackonare	Empire 50, 17-18	13/			2	
A4, A6, Passenger	01/	3	1.41/	0	Rear Wheel	Empire 51, '17-18	13/	32	351/4		Internal
1915	. 2/2	76	141/2	8		Empire 51, '17-18	174	3,5	371/4	2	External
A4 Truck, 1915	21/2	16	16	8	Rear Wheel	Empire 70 70A, '17	1%	16	3116	2	Internal
2 Ton AW, 1915.	23/4	1/4	18	4	Rear Wheel	Empire 70 70A, '17	2	16	341/2	2	External
2 Ton AW, 1915.	. 2	1/4	6	4	Jackshaft	Empire 71, 1917	2	32	311/8	2	Internal
K4, 2 Ton Truck		1/4	$13\frac{1}{2}$	8	Internal	Empire 71, 1917	2	32	331/2	2	External
6-80 Touring	$2^{1/2}$	130	23	4	Internal	Empire 72, 73, '18	13/4	19	3118	2	Internal
6-80 Touring	. 21/2	130	23	4	External	Empire 72, 73, '18		16	341/2	2	External
1B6, 1916-17	21/4	13g	451/2	4	Band	Amp. 1.1, 1.1,					
1BW, 1916-17		1/4	121/4	8	Duplex	Essex—					
6-70 Passenger, 1918		1/4	451/2	4	Band	Model A, 1920	13/4	16	2013	4	Ext. Con.
		1/.	131/2	8	Duplex	Model A, 1920		16	421/2	2	Int. Exp.
K4 Truck, 1918		1/4			Internal	Model A, 1919		16	2013		Internal
2 Ton, 1919		1/4	131/2			Model A, 1919	13/	16	20 %		External
2 Ton, 1919	. 374	1/4	15%		Internal	Model A, 1919	- 14		2014	100	
6-80, 1919	. 21/4	1/4	451/2		Internal	Fageol Truck, 2 Ton,	1				The side of
6-80, 1919	. 21/4	1/4	. 451/2		External	1918	31/2	1/4	131/4	8	Internal
6-80, 1920	. 21/2	13	471/2		External				-	2 - 43	224 012
6-80, 1920	. 21/2	16	461/2		Internal	Fageol Truck, 31/2		1/4	153/4	8	Internal
K4-4, 1918-20		1/4	131/2	4	Int. & Ext.	Ton, 1918		/4	10/4	0	Internat
K7-31/2, 1919-20		1/4	153/4	4	Int. & Ext.	Fageol Truck, 5 Ton,		1/	10	0	Testamonal
1010 20 11	A. Car		The same of	11 147		1918	4	1/4	18	8	Internal
Dort-						Fageol Truck, 2 Ton, 1919	011				CAUL AL
4, 1915	11/	32	27 %	2	External	1919	31/2	1/4	131/4	8	Internal
		100	2833	2	Internal	Fageol Truck, 31/2		* 0			
4, 1915		32	2032			Ton, 1919	31/4	1/4	15%	8	Internal
5, 6 and 9, 1915-16		5	071/	0	External	Fageol Truck, 5 Ton,					
17		32	271/s	2	Laternal	1919		1/4	18	8	Internal
5, 6 and 9, 1915-16	)-		0011	0	Internal	1½, 1920		16	191/4	2	Int. & Exp.
17	. 1%	32	2811	2	Internal	21/2 ,1917-20		1/4	131/4	2	External
8 and 11, 1918	. 1%	32	35%	2	External	279 ,1017-20	4.04	-	22.40		

-Size	of Brake-				-Size of Br	ake—		
Car Model Year Wdth.	Lining Thick Lath	No.	Tunna	Car Model Year	Lining		No.	Type of
Car Model Teal Willi.	ness	Pcs.	Type of Brake	Cai Model Tear	ness	Ligen.	Pcs.	Brake
Fageol Truck-				Gabriel Truck D, 1917-18		113/4	4	Ser. Int. Exp.
2½ ,1917-20 3¼	1/4 131/4	2 2	Internal	Gabriel Truck D,		11/4	*	Ger. The Lap.
4500, 1917-20 3 <sup>1</sup> / <sub>4</sub> 5300, 1917-20 4	is 15½ is 18	2	Int. & Ext. Int. & Ext.	1917-18	31/4 1/4	113/4	4	Em. Int. Exp.
Fargo-				Gabriel Truck E, 1917-18	31/2 1/4	13 rs	4	Ser. Int. Exp.
O, 1917, P, 1918 2	16 50½		Internal	Gabriel Truck E, 1917-18	31/2 1/4	13 %	4	Em. Int. Exp.
P, 1919, P, 1920 3 O17, P18-2, P19-2,	re 50½	2	External	Gabriel Truck F,				13/1 (20)
P20-2, 1920 3 O17, P18-2, P19-2,	re 52	2	External	Gabriel Truck F,		113/4	4	Ser. Int. Exp.
P20-2, 1920 2	n 501/2	2	Internal	1918	31/4 1/4	113/4	4	Em. Int. Exp.
Federal Truck—				Garford Truck 66B	31/2 1/4	13 rs	2	Internal
GH, 1914-15 2	181/2	4	Contract.	Garford Truck 66B		1318	2	External
GH, 1914-15 3	3 23½	4	Contract.	Garford Truck 75C	33/4 1/4	113/4	2	Internal
J, K, M, O, P,	1/ 19	0	Frand	Garford Truck 75C		113/4	2	External
1915-16 3½ L, 1915-16 3½	1/4 12 1/4 13 n	8	Expand Expand	Garford Truck 70B		13 13	2	Internal
S, 1917-19 31/4	1/4 12	8	Expand	Garford Truck 70B		1316	2	External
T. TC, TD, 1917-	/4 12		Дарини	Garford Truck 77B		15%	4	Rear Wheel
19 3½	1/4 13 1	8	Expand	Garford Truck 68-69. Garford Truck 68-69.		$\frac{10\frac{1}{2}}{21\frac{5}{8}}$	2 4	Transmission Rear Wheel
U, UC, UD, 1917-			0.000	Garford Truck 77		1313	8	Rear Wheel
19 3½	1/4 13 1	8	Expand	79		21%	4	Emergency
W, WC, WD, 1917-			Dill market -	79		121/4	2	Service
19 3¾	1/4 15%		Expand	1 Ton, Model 75C,			7 .	
X, XC, 1917-19 4	1/4 171		Expand	1919		113/4		Internal
SD, 1920 3	1/4 1050		Expand	11/4 Ton, Model 25,		4 - 01		
TE, 1920 3½	1/4 13 n 1/4 13 n		Expand Expand	1919-20		113/4	4	Int. & Ext.
UE, 1920 3½ WD, 1920 3¾	1/4 15%		Expand	1½ Ton, Model 66B, 1919		1313		Internal
XC, 1920 4 SD1, 1920 3	1/4 1718 1/4 1033		Expand Int. & Ext.	2 Ton, Model 70B,				
TE1½, 1920 3½	1/4 13 13	4	Int. & Ext.	70H, 1919-20 3½ Ton, Model	31/2 1/4	13 13	4	Int. & Ext.
UE2, 1920 3½ WE3½, 1920 3¾	1/4 13 ft 1/4 15 %		Int. & Ext. Int. & Ext.	77CD, 1919-20 3½ Ton, Model		$15\frac{\%}{8}$	4	Int. & Ext.
XE5, 1920 4 Light Duty, 1920. 3½	1/4 17 1 1/4 13 3	4	Int. & Ext.	77B, 1919	3% 1/4	15%		Internal
Heavy Duty, 1920 3%	1/4 155/		Int. & Ext. Int. & Ext.	3½ Ton, Model 77B, 1919	. 97	121/4		Internal
Fiat 54 3	1/4 9	2	Emergency	5 Ton, Model 68,	. 19/	101/2	2	Internal
Fiat 54 2½	1/4 21 f		Service	1920 5 Ton, Model 68,			2	
Fiat, All Later Models 2	1/4 171/	4	Emergency	1920 5-6 Ton, Model		25%	4	External
Fiat, All Later Models 2½	1/4 21 1		Service	68B, 1919	4 %	$10\frac{1}{2}$		Internal
	/4 211	, 1	Service	5-6 Ton, Model 68B, 1919		21%		Internal
Ford T, 1909 to '20 inclusive 11/8	f2 231/	3	Transmission	The Real Property lies				
Ford T1, 1920 13	11 233		External	Gary Truck-				Ad Truct 1
Ford T1, 1920 1%	re 12	2	Internal	W10, W20, 1917		46 %	2	External
Fulton Truck C				W10, W20, 1917	3 16	4610	2	Internal
Purion Truck C				W1500, 1917	2 16	18	8	Internal
Franklin G1 2	re 19	1	Transmission	W21, 1917		49 <sup>5</sup> / <sub>8</sub> 22 <sup>1</sup> / <sub>2</sub>	2	Internal Int. & Ext.
Franklin G1 2	s <sup>2</sup> 30	2	Rear Wheel	F1, 1920 GTI1½, 1920		24	2	Int. & Ext.
Franklin M1-2-3, G2,				J2½, 1920	31/2 1/4	27	2	Int. & Ext.
L50, 1 2% Franklin M1-2-3, G2,	32 35 Y	c 2	Rear Wheel	K3½, 1920	33/4 1/4	32	2	Int. & Ext.
L50, 1 4	fe 237	8 1	Transmission	M5, 1920	4 1/4	$36\frac{1}{2}$	2	Int. & Ext.
Franklin H1-2-3, D2-				G. M. C. Truck 16				
3, L6	re 281	8 1	Transmission	1917-18	1% 32	41	2	Internal
3, L6 3	32 44 7		Rear Wheel	G. M. C. Truck 16 1917-18		43	2	External
Franklin M4-5-6-7-8 4 Franklin M4-5-6-7-8 2%	1 237 5 35 35 1		Transmission Rear Wheel	G. M. C. Truck 21		113/4	8	Internal
Franklin Series 9 3	16 237		Transmission	1917-19				
Franklin Series 9 2%	32 28	2	Rear Wheel	G. M. C. Truck 71	, 31/2 1/4	13 rs	8	Internal
6, 1919 2 %	1 28 2 227	,	External	1917 G. M. C. 31, 1917	31/4 1/4	113/4	Q	Internal
6, 1919 3 Series OR 1920 3	7 237 16 231		External	G. M. C. 31, 1918	31/2 1/4	13 13	8	Internal
Series 9B, 1920 3 Series 9B, 1920 2	16 28 16 28		Internal External	G. M. C. 41, 1917	31/4 1/4	113/4	8	Internal
	10 40		LACTHAL	G. M. C. 41, 1918	31/2 1/4	1316	8	Internal
Gabriel Truck C, 1916 2½	n 49	2	Internal	G. M. C. Truck 71 1918		155/	0	Internal
Gabriel Truck C,		- 1 70	The Court	G. M. C. Truck 101		15%	8	Internal
1916 2½	1 <sup>3</sup> c 53 <sup>1</sup>	2 2	External	1917-18		18	8	Internal

				MMERCIAL CAP	R BRAKE LIMING DA					
	Siz	e of Brake-				—S126	of Bra	ke-	NT-	
Car Model Year	Wdth	Lining Thick, La	th. o		Car Model Year	Wdth.		Leth	No.	Type of
Cai Model Teal	.,	ness	Pc		2011		ness	-Ben.	Pcs.	Brake
G. MC. Truck-					Gramm Bernstein	1				Const
1/4 Ton, Model 1	6,				77, 3½ Ton		1/4	1316	8	Rear Wheel
1919		3 <sup>5</sup> 2 40	18	Internal	Gramm Bernstein		3/	101/	0	Deserte Chafe
% Ton, Model 1		s <sup>5</sup> 2 43	10	External	77, 3½ Ton Gramm Bernstein		%	121/4	2	Proplr Shaft
1 Ton, Model 2	1.	32 40	16	Lyxternat	68, 5-6 Ton		1/4	21%	4	Rear Wheel
1919	. 31/4	1/4 11	3/4	Internal	Gramm Bernstein					
1½ Ton, Model 3 1919	1,	1/ 10	,		Truck 68, 5-6 Ton		3/8	101/2	2	Proplr Shaft
1919	. 31/2	1/4 13	re	Internal	Gramm Bernstein		1/	215/		Pear Wheel
2 Ton, Model 4	31/2	1/4 13	3 · · ·	Internal	69, 5-6 Ton Gramm Bernstein		1/4	21%	4	Rear Wheel
3½ Ton, Model 7	1.	,,			69, 5-6 Ton		3/8	101/2	2	Propir Shaft
1919	. 31/4	1/4 15	% ···	Internal	Gramm Bernstein					MET ATT
5 Ton, Model 10		1/ 17	15	Internal	W, 1 Ton, 1917		Ye	18	8	Internal
1919	. 1	1/4 17	16	Internal	Gramm Bernstein W, 1½ Ton, 1917		3.	4616	2	Internal
G. V. Electric					Gramm Bernstein		16	4016	-	Internat
Truck 1,000 lbs.					W, 11/2 Ton, 1917		1/4	46 Ps	2	External
1203A15		1/ 17	17 4	Polis Comiles	Gramm Bernstein			Site.		
G. V. Electric	2	1/4 17	1/4 4	Exp. Service	Truck W, 2 T. '17		16	4616	2	Internal
Truck 2,000 lbs. 1807A15	1111				Gramm Bernstein		1/	10.9	9	Putamal
G. V. Electric Truc					Truck W, 2 T. '17 Gramm Bernstein		1/4	4616	2	External
2 Ton, 407A15		1/4 29	2	Cont. Emer.	Truck W, 21/2 Ton					
G. V. Electric Truc					1917		1/4	481/8	4	Internal
2 Ton, 2407A15		1/4 19	% 4	Exp. Service	Gramm Bernstein					
G. V. Electric Truc 3½ Ton, 3001A15.		1/4 29	2	Cont. Emer.	Truck W, 31/2 Ton,		.,			property and
G. V. Electric Truc		74 20		Cont. Diller.	Gramm Bernstein		1/4	56%	4	Internal
31/2 Tons, 3001A15.		1/4 23	3/8 4	Exp. Service	Truck W, 5, 6 Ton,					
FV, 5 Ton, 3607	A-				1917		1/4	683/4	4	Internal
15	. 2	1/4 23	4	Exp. Service	1 Ton, Model SW					
FV, 5 Ton, 36071	1-	1/4 29	2 - 2	Cont. Emer.	1500, 1919		16	171/2		Internal
19	(1)	/- 20		Cont. Lines.	1½ Ton, Model		1/	10		Internal
Glide 6-40, 1916-17-18			1/2 2	Internal	SW10, 1919 1½ Ton, Model		1/4	48		Internal
Glide 6-40, 1916-17-18		32 41		External	SW10, 1919	3	1/4	48		External
Glide 6-40, 1919 Glide 6-40, 1919		35 40 35 41	1/2	Internal External	11/2 Ton, Model					
The state of the s					SW102, 1919		16	45		Internal
Globe Truck A, '16			1/2 2	Internal	1½ Ton, Model C1, D15, 1919		3.	461/2		Internal
Globe Truck A, '16.	7 21/2	r6 41	1/2 2	External	11/2 Ton, Model Cl,		16	40/2		Internat
Globe Truck A1, 191		re 50	2	Internal	D15, 1919		3 16	481/2		External
Globe Truck A1, 191		10 00			2 Ton, Model					Manual Stuck .
18	. 13/4	re 50	2	External	SW20, 1919	3	1/4	48		Internal
Globe Truck B, 191		3 47		Internal	2 Ton, Model SW20, 1919		1/4	48		External
Globe Truck B, 191		re 47	2	Internal	2 Ton, Model		/4		5102	- I
18		re 52	2	External	SW103, 1919	2	16	45		Internal
Globe Truck C, C		10 02	2 1000	A GOLDONIA	21/2 Ton, Model		1/	-0		Testament
1917-18		re 50	2	Internal	SW21, 1919 3½ Ton, Model		1/4	50	**	Internal
Globe Truck C, C		ris 52	2	External	SW30, 1919	21/2	1/4	57		Internal
1917-18		16 52	-	DATELLIA	5 Ton, Model		16			THE REAL PROPERTY.
1920		3 21		Internal	SW50, 1919		1/4	71		Internal
Globe Truck, 4B, 1	0-				15-1½, 1920 15-1½, 1920		16	48½ 46½	2 2	External Internal
1920	. 2	16 23	%	External	65-11/2, 1920		3 16	18		Int. & Ext.
Gramm Bernste	in	,			20-2, 1920	2	16	221/2	4	Int. & Ext.
Truck 64, 34 Ton		13 13	1/4 4	Rear Wheel	25-21/2, 1920	21/4	11/4	221/2		External
Gramm Bernste	in				25-21/2, 1920	21/4	1/4	221/2		Internal
66, 1½ Ton		16 41	2	Jackshaft	35-3½, 1920	274	11/4	26 26		External Internal
Gramm Bernste		1/4 43	% 2	Internal	35-3½, 1920	23/4	11/4	321/2		External
66, 1½ Ton Gramm Bernste		/4 10	/• ~	Internal	50-5, 1920	23/4	1/4	321/2	4	Internal
66, 1½ Ton		1/4 52	1/2 2	External			3	1012	0	Internal
Gramm Bernste	in				Grant 4, 1916-17	11/2	16	1818	2	Internal
70, 2 Ton		1/4 43	% 2	Internal	Grant 4, 1916-17	13/4	18 18	22% 27¼	2 2	External Internal
Gramm Bernste		1/ 50	1/ 9	External	Grant 6, 1916-17 Grant 6, 1916-17	13/4	16	31%	2	External
70, 2 Ton Gramm Bernste		1/4 52	1/2 2	LACCINAL	Grant 6K, 1917, 6G					
Gramm Bernstei		r 38	1/2 2	Jackshaft	1918	1%	3/2	351/4	2	Internal
Gramm Bernste					Grant 6K, 1917, 6G		5	271/	0	Dutam-1
67, 3 Ton	. 31/2	1/4 50	% 2	Rear Wheel	1918	174	32	371/4	2	External
Gramm Bernstei		1 <sup>3</sup> c 18	8	Rear Wheel	1919	2	de	41 Å		Internal
75, 1 Ton	. 2	16 18	0							

			, (	OMMERCIAL	-Size of 1		itiliuco	1.	
all a	ize of Brake- Lining		Vo.			Lining		No.	
Car Model Year Wd				Type of	Car Model Year Wdth		Lgth.	of	Type of
The second second	ness	Po	cs.	Brake	Hawkeye Truck J,	ness		Pcs.	Brake
Grant- % Ton, Model 12,					1917 1 <sup>3</sup> / <sub>4</sub>	130	471/2	2	Cont. Service
1919 2	s 42	1/4		External	Hawkeye Truck J,				CIBI
11/2 Ton, Model 10-				CHILD BURNET	1917 1½	13	47	2	Exp. Emer.
11, 1919-20 21/4	s 2 43	16 2	2	Internal	Hawkeye Truck K,	1 <sup>3</sup> c	471/4	2	Cont. Service
1½ Ton, Model 10-	32 45	2		External	1918	16	11/4	-	Cont. Dervice
11, 1919-20 21/2 2 Ton, Model 15-	32 45	-		Externar	1918 11/2	10	47	2	Exp. Emer.
16, 1919-20 21/4	32 52	1/8 2	2	Internal	Hawkeye Truck L, 1918 3				
2 Ton. Model 15-				. COLUMN TOOL	1918 3	1/4	471/4	2	Cont. Service
16, 1919-20 21/	2 sig 54	1's 2		External	Hawkeye Truck L, 1918 2 <sup>1</sup> / <sub>4</sub>	1/4	47	2	Exp. Emer.
17A, 1920 21/2	32 45 32 43	1 2		External Internal	L, 1918 3	1/4	471/4	2	Cont. Service
17A, 1920 2½ 6HX, 1920 2	. 32 10			External	L, 1918 21/4	1/4	47	2	Exp. Emer.
6HX, 1926 2				Internal	K1½, 1919-20 2	16	48	2	External
					K1½, 1919-20 1½	18 a	47	2	Internal
Grant Denmo Truck,					M2, 1919 20 2 <sup>1</sup> / <sub>2</sub>	78	54 52	$\frac{2}{2}$	External Internal
1½ Ton, 10, 11,				Control of the last	M2, 1919-20 2	10			_
1916-17 21/	1 16 44	2	-	Internal	Hollier 8, 1915 1½	10	23 18	2	Emergency
Grant Denmo Truck,				Comment of	Hollier 8, 1915 1½	16	3716	2	Service
2 Ton, 15 16, 1916- 17 2½	4 1 46	3 2	2	External	Hollier 8, 1916 1½ Hollier 8, 1916 2	16 3 16	34 18	$\frac{2}{2}$	Emergency Service
Grant Denmo Truck,		alti		2,110	Hollier 186, 187, '17 11/2	16 16	3418	2	Internal
3/4 Ton, 12, 1918 2	32 41	2	2	Internal	Hollier 186, 187, '17 2	3. 16	37 18	2	External
Grant Denmo Truck,					206B, 1919 1½	16	34 18		Internal
3/4 Ton, 2, 1918 2	32 42	2	2	External	206B, 1919 2	To To	37 10		External
Grant Denmo Truck,	5 40		,	Internal	206, 1920 2	16	37		External
1 Ton, 12, 1918 21/	4 32 43	3 2		Internal	206, 1920 1½	76	34		Internal
Grant Denmo Truck, 1 Ton, 12, 1918 21/	2 52 45	5 2	2	External	206B, 1920 2 206B, 1920 1½	10 10	37 15 34		External Internal
Grant Denmo Truck,			100		200B, 1920 1/2	16	0.1		Internat
2 Ton, 12, 1918 21/	4 Ye 52	2 2	2	Internal	Holmes 1, 1918 21/4	13g	22	1	Trans.
Grant Denmo Truck,		-		The state of the s	Holmes 1, 1918 2	16	383/4	2	Rear Wheel
2 Ton, 12, 1918 21	2 16 54	2	2	External	1919 2	16	40		Internal
Haber Touch P /17 91	4 1/8 44	2	,	Internal	1919 2 <sup>1</sup> / <sub>4</sub> 1920 3	1/4	22¾ 28⅓		External Internal
Hahn Truck B, '17 25 Hahn Truck B, '17 25				External	1920 21/2	1/4	411/2		External
Hahn Truck C. D.			100	Zanter Han		/4	/2		
Hahn Truck C, D, 1917 35	4 1/4 12			Duplex	Hudson 6-40, 1915- 1916 2	1ºs	401/4	2	Internal
Hahn Truck E, '17 31	4 1/4 12		3	Duplex	Hudson 6-40, 1915-	16	10/4	~	Internat
Hahn Truck G, '17 21	2 16 54		2	Internal	1916 2	18 TE	433/4	2	External
Hahn Truck G, '17 21	2 1/4 55			External	Hudson 6-54, 1915-16. 2	ro	481/2	2	Internal
Hahn Truck H, '17 21/ Hahn Truck H, '17 21/				Internal External	Hudson 6-54, 1915-16. 213	136	501/4	2	External
Hahn Truck F 31		31/2 8		Duplex	Hudson Super-Six	2	002/		T
					1916-17-18 2	16	383/4	2	Internal
Harroun AA1, 1918 13			2	Internal	Hudson Super-Six 1916-17-18 2	30	433/4	2	External
Harroun AA1, 1918 13	4 32 3	3% 2	2	External	Super Six, Model	16	40/4		Lyxternar
Harvey Truck WFA,					H&M, 1919-20 2	You	391/s	2	Internal
1917, 21/2 Ton 21	4 1/4 55	2 . 4	4	Internal	Super Six, Model				
Harvey Truck WHA,		1949	11	THE THE	H&M, 1919-20 2	130	441/s	2	External
1917, 3½ Ton 21	2 1/4 50	5 4	1	Internal	Super Six, Model	3	003/		T
Harvey Truck WKA, 1917, 5 Ton 3	rs 6	9	4	Internal	O, 1919-20 2½ Super Six, Model	130	20%	4	Internal
Harvey Truck WEA.	re 6	-		Anternai	O, 1919-20 2½	3°	221/4	4	External
1½ Ton, 1919-20 2	1/4 4	3 . 2	2	Int. & Ext.	Super Six O, 1920. 21/2	3	221/4	1	External
Harvey Truck WFA,					Super Six O, 1920. 21/2	36	203/8		Internal
2½ Ton, 1919-20 21	4 1/4 5	2 2	2	Int. & Ext.	Hupmobile K, '15 2	32	39%	2	Internal
Harvey Truck WHA,	/ 1/ =			T-4 0 T-4	Hupmobile K, '15 2	32	411/4	2	External
3½ Ton, 1919-20 25 Harvey Truck WKA,	2 1/4 51	0 2	2	Int. & Ext.	Hupmobile N, '16-'17. 2	32	391/8	2	Internal
5 Ton, 1919-20 3	n 6	9 5	2	Int. & Ext.	Hupmobile N, '16-'17. 2	32	411/4	2	External
				TAC.	Hupmobile R, '18 13/4	32	337/8	2	Internal
Haynes 30-33-34					Hupmobile R, '18 2	1/8	331/4	2	External
1915 Hayros 25 1016					R, 1919 2 R, 1919 2	32 1/8	331/s 337/s		Internal External
Haynes 35, 1916 13	¾ f <sub>2</sub> 1	51/2	8	Internal	R, 1920 2	32	331/2		Internal
Haynes 38-39, '18	32 1	0/2	3	Addinal	R, 1920 13/4	1/8	337/8	-:	External
Haynes 40-41, '17					N, 1920 2	32	411/2		External
Haynes 44, 1918					N, 1920 2	32	39%		Internal
Model 45-46, 1919,	, .	-1/	0		K, 1920	32	411/4		External
14-inch brake 1	4 32 1	51/2	8	Internal	K, 1920 2	32	39%		Internal
Model 45-46 1919, 16-inch brake 15	1/4 str 4	6%	4	Internal	Hurlburt Truck, 1½	1/	4=		Testagnal
Model 45-46, 1920. 1			4	Internal	Ton, 1916-17 21/4 Hurlburt Truck, 11/2	1/4	47	2	Internal
Model 47-48, 1920. 1		65% .		Int. & Ext.	Ton, 1916-17 2½	1/4	41	2	External
				- 1	2010 11111111 2/2	74	**	-	Z/A CCI IIII

	PLEAS	URE	AND	COM	MERCIAL CAR	BRAKE LINING D	AIA-	(Contin	nuea).		
	-Size		se-					of Brai	ke—		
0 16 11 17		ining	T	No.	711	Con Model Veer		Lining	T - +1	No.	m
Car Model Year	wath.		Lgth.	of Pcs.	Type of Brake	Car Model Year	wath.	ness	Lgtn.	of Pcs.	Type of Brake
Hurlburt Truck	2	ness		res.	Diake	Interstate T, 1917-18.	13/4	ile ile	351/4	2	Internal
Ton, 1916		1/4	131/2	4	Internal	Interstate T, 1917-18.		16	37 10	2	External
Hurlburt Truck	2					Jackson 44, 1915	13/.	2	193/	9	Tutamal
Ton, 1916		1/4	7	2	External	Jackson 44, 1915		32 16	42¾ 45%	2 2	Internal External
Hurlburt Truck Ton, 1917	2 . 3	1/4	47	2	Internal	Jackson, 46, 1915		32	423/4	2	Internal
	2	74	41	2	Internal	Jackson, 46, 1915		16	45%	2	External
Ton, 1917	_	1/4	41	2	External	Jackson, 48, 1915		16	36	2	Internal
Hurlburt Truck 31/	2					Jackson, 48, 1915		16	48	2	External
Ton, 1916-17	. 3	1/4	15	4	Internal	Jackson (1st 500) 34, 1916		32	351/4	2	Internal
Hurlburt Truck 3 <sup>1</sup> / Ton, 1916-17		1/4	91/2	2	External	Jackson (1st 500) 34,		32	00/4	-	Internat
Hurlburt Truck		/4	0/2.	-	Lyxternar	1916		re	371/2	2	External
Ton, 1917	CV21	1/4	60	2	Internal	Jackson (balance sea-			0=1/	-	ON THE
Hurlburt Truck					Marine Marine	son) 34-8, 1916	2	32	351/4	2	Internal
Ton, 1917		1/4	60	2	External	Jackson (balance sea- son) 34-8, 1916	2	130	381/2	2	External
Hurlburt Truck Ton, 1916-17		1/4	61	2	Internal	Jackson 68, 1916		16	42	2	Internal
Hurlburt Truck	_	/4	01		Theerman	Jackson 68, 1916		16	44	2	External
Ton, 1916-17	. 3	1/4	161/2	2	External	Jackson 349, 1917		32	351/4	2	Internal
A1½-2, 1920		1/4	22	2	Int. & Ext.	Jackson 349, 1917 Jackson 350, 1917		16 32	38½ 35¼	2 2	External
B2½, 1920		1/4	24	2	External	Jackson 350, 1917		32 16	381/2	2	Internal External
B2½, 1920		1/4	23 26	2 2	Internal External	638 Touring, 1920			351/4	2	Serv. Cont
C3½-4, 1920			25	2	Internal	638 Touring, 1920	2	32	151/4	1	Emer. Cont.
D5-5½, 1920			28	2	External	6-38, 1919		32			External
D5-5½, 1920	. 3	1/4	27	2	Internal	6-38, 1920 6-38, 1920		32			External Internal
Indian Motor Cycle						B3½, 1920		1/4 .	581/2	2	External
1910-11		1/8									
Indian Motor Cycle		, ,				Jordan J 60-4, 1917 Jordan J 60-4, 1917			38¾ 43¾	2 2	Internal External
1912-13-14		1/8				B. C., 1917-18		3 16	433/4	2	Internal
Indian Motor Cycle 1915-16		1/_				В. С., 1917-18		18	383/4	2	External
Indian Motor Cycle		1/8				В, 1917					
1917-18-19		1/8				C, 1918 F, 1919		Te Te	0027		Internal
Indiana Truck D						F, 1919		16	1027		External
1916-17-18	91/	1/4	52	4		F, 1920			221/2		External
Indiana Truck R	,					F, 1920			20 7		Internal
1916-17-18	. 21/2	1/4	581/2	4		M, 1920 M, 1920			4014		Internal External
Indiana Truck I. 1916-17-18	. 3	1/4	68	4			- /-	10			4
Indiana Truck S		/4	~	*		Karrylode Platform	01/	3	00		
1916-17	. 3	1/4	101/s	8	Internal	Truck, '17 Karrylode Lifting	2/2	10	22	2	Internal
Indiana Truck T		1/	001/	0	*	Truck, 1917	21/2	16	22	2	Internal
Indiana Truck T	. 2	1/4	201/2	8	Internal	Karrylode Tractor,					
1918		1/4	261/2	8	Internal	1917	21/2	16	22	2	Internal
Indiana Truck Q	,	4				Karrylode Crane,	21/.	16	22	2	Internal
1918	. 2		45	4	· · · · · · · · · · · · · · · · · · ·		2/2	16		-	Internal
12-1¼, 1919-20 20-2, 1919-20	. 2		17½ 44	8	Int. & Ext. Int. & Ext.	Kelly Truck K-31,	17/	2	40		THE REAL PROPERTY.
25-21/2, 1919-20		4.6	51	4	Int. & Ext.	1915-16-17 Kelly Truck K-35,	1/8	12	46	4	Exp.
35, 1919-20	. 21/2	1/4	56	4	Int. & Ext.	1915-16-17	11/8	136	46	4	Exp.
50, 1919	. 3	1/4	68	4	Internal	Kelly Truck K-40-45-					
51-5, 1920		1/4	68	4	Int. & Ext.	50-60, 1915-16-17	23/s	16	201/2	4	Exp. Hdbrk.
International Truck						Kelly Truck K-40-45- 50-60, 1915-16-17	976	3° :	201/2	4	Exp. Ftbrake
E, 1915		18	1718	4	Internal	Kelly Truck K-32-36,	2/8	16	2072		LAP. Profake
International Truck E, 1915		32	22%	1	Service	1916-17	11/8	13	16%	8	Exp.
International Truck		32	22/8	DIOT	Service	Kelly Truck K-31,	17/	3			
F, 1915	. 21/4	16	1932	4	Internal	1918	1/8	16	16	4	Exp.
International Truck	21/	3	10	0	D 4	1918	13/8	र्वेंड	151/2	8	Exp.
F, 1915 International Truck	2/2	1'c	42	2	External	Kelly Truck K-40-45-					
F-H, 1916-20	. 21/4	3	43¾	4	Internal	50-60, 1918	2%	16	201/2	4	Exp.
International Truck						Kelly Truck K-32, 1918	13/-	ric :	16%	8	Evo
G, 1917-'18	. 21/4	16	50%	4	Internal	Kelly Truck K-36,	1/8	16	10/8		Exp.
International Truck K, 1918-20	91/	ric .	50%	4	Internal		11/8	ra :	163/8	8	Exp.
G2, 1918-20	21/4	16	50% 50%	2	Int. & Ext.	Vally Springfield					
L3½, 1920	. 21/2		73 16	2	Int. & Ext.	Kelly-Springfield Truck—					
Interstate T, '15-16		3 16	351/4	2	Internal	K31, 1915-16-17	1%	il e	16	4	Exp.
Interstate T, '15-16	13/4	16 16	371/8	2	External	K35, 1915-16-17		9	4.00	4	Exp.

	-Size	e of Bra	ke			-S	ize of Bra	ke		
New Madel Veer		Lining		No.	70	Car Model Year Wd	Lining	Lath	No.	Type of
Car Model Year	watn	ness	Lgtn.	of Pcs.	Type of Brake	Car Model Year Wd	ness	Ligen.	Pcs.	Brake
Kelly-Springfield						Kissel Kar 4-36, 6-42,		041/	0	
Truck- K40-45-50-60, 1915-						4-32, 1915-16 2 4 Ton GD, 1919 2	16	$\frac{34^{1/2}}{44^{1/4}}$	2	External Internal
16-17		76	201/2	4	Exp. Hand	1½ Ton GU, 1919. 2	16	19		Internal
K40-45-50-60, 1915-						2 Ton FR, 1919 31/2	1/4	14		Internal
16-17		10	201/2	4	Exp. Foot	3½ Ton HD, 1919. 2½	The state of	56		Internal
K32-36, 1916-17 K31, 1918		16 3 16	16% 46	8	Exp. Exp.	Kissel Kar-				-
K35, 1918		16 3 16	151/2	8	Exp.	Passenger, 1919 2	1,6	441/4		External
K40-45-50-60, 1918	2%	36	201/2	4	Exp.	Custom Built 45, 1920 2	r <sup>3</sup> c	441/4		Internal
K32, 1918		16	16%	8	Exp.	Custom Built 45,				
K36, 1918 11/2 Ton, Model		Te	16%	8	Exp.	1920 2	16	441/2		External
K31, 1919-20		To To	16%	4	Int. & Ext.	Utility 1½, 1917-20 2 Freighter 2, 1917-20 3½	1/4	19 14	4	Int. & Ext.
11/2 Ton, Model						Heavy Duty, 3½,	74	**	-	The te the
K34, 1919 1½ Ton, Model		3%	17%		Internal	1917-20 21/2	Te Te	56	2	Int. & Ext
K34, 1920		1/4	42%	2	Int. & Ext.	Goliath 5, 1919-20. 21/2	2 16	56	2	Int. & Ext.
21 Ton, Mode						Kleiber Truck 31/4	1/4	113/4	2	Internal
K35, 1919		16	16%		Internal	Kleiber Truck, 1½	.3.	16.7	2	Internal
2½ Ton, Mode K35, 1920		ris.	16%	. 4	Int. & Ext.	Ton, A, 1917 3 Kleiber Truck, 1½	16	4616	2	Internal
21 Ton, Mode		1.6	1074		111t. tt 13xt.	Ton, A, 1917 3	1/4	4618	2	External
K36, 1919		rk	17%		Internal	Knox 8 31/2	16	19	4	Emergency
21/2 Ton, Mode		1/	107/	0	I 9 F	Knox 8 3	T'G	38	2	Jackshaft
K38, 1920 31 <sub>2</sub> Ton, Mode		1/4	48%	2	Int. & Ext.	Knox 18	16	37 20½	2	Jackshaft Emergency
K40, 1919-20		ra ra	21	4	Internal	35, 1915-20 61/2		573/4	1	Internal
312 Ton, Mode						36-3, 1915-20 61/3		573/4	1	Internal
K40, 1920 3½ Ton, Mode		16	21	4	External	Knox Tractor 35-36,				
K41, 1920		is.	281/4	2	Internal	1917 61/2	1/4	57	2	Emergency
31/2 Ton, Mode						Koehler Truck 2	1/8	24	3	Plane. Trans
K41, 1920		r'o	581/2	4	External	C1¼, 1919-20 2½		47	2	External
31/2 Ton, Mode K42, 1920		1/4	271/2	8	External	C1¼, 1919-20 2½		46	2	Internal Int. & Ext.
31/2 Ton, Mode	el	/*	21/2	0	Lixternar	M2½, 1919-20 3½		13½	4	
K42, 1920	. 2%	1/4	271/2	4	Internal	Lange Truck A 1 Ton 2	16 1/.	$\frac{12^{1/2}}{29}$	4 2	Emergency Service
4 Ton, Model K4	5,		91		Internal	Lange Truck A 1 Ton 2 Lange Truck B 1,	1/4	29	2	Service
1919-20 1 Ton, Model K45	. 275	re-	21	4	Internal	1½, 2, 2½ Ton 3	1/4	18	4	Emergency
1920	. 21/8	16	21	4	External	C 1, 11/2, 2, 21/2 Ton 2	1/4	29	2	Service
5 Ton, Model K50 1919-20	0,		0.1		D.	2, 1920 2	1/4	30 18	2	External Internal
1919-20	278	i's	21	4	External	2, 1920 3 Larrabee Truck, 1½	74	10	1 110	Titternar
5 Ton, Model K50 1919-20	. 2%	16	21	4	Internal	Ton, 1916 3	1/4	48	2	Internal
6 Ton, Model K6	0.				THE STREET	Larrabee Truck N 2				
1919-20	. 2%	16	21	4	Internal	Ton, 1916 3	1/4	.18	2.	External
6 Ton, Model K6	6371	18	21	4	External	Larrabee Truck M 1 Ton, 1917 2	· 1/4	48	4	Internal
1010 20 111111	-					Larrabee Truck O &	/4	4,		THECTHO
King E, 1916	. 2	1/8	183/4	2	Emergency	P, 2½ Ton, '17 2½	1/4	54	4	Internal
King E, 1916	. 2	32	41	2	Service	Larrabee Truck R &	1/	00		Y-41
King EE, 1917, firs	st	1/8	18%	2	Emergency	S, 3½ Ton, '17 2½ C, 2½ Ton, D, 3	2 1/4	60	4	Internal
1,000 cars King EE, 1917, firs	st.	78	10/4	-	Limergency	Ton, 1918 21/	4 1/4	54	4	Internal
1,000 cars	. 2	3/2	41	2	Service	A, 31/2 Ton B, 4				. 164
King EE, 1917, after	er		40.1		n	Ton, 1918 21	2 1/4	60	4	Internal
first 1,000 cars		32	4315	2	Emergency	T, 5 and 6 Ton, 1918 3	1/4	72	4	Internal
King EE, 1917, after first 1,000 cars	. 2	32	45	2	Service	U, 11/2 Ton, 1919 2	18	48		Internal
King F, 1918	. 1%	32	4316	2	Emergency	C, 21/2 Ton, 1919 21/2		54		Internal
King F, 1918	2	32	45	2	Service	D, 2½ Ton, 1919 2½	4 1/4	54		Internal
King Truck, 3½ To: 1911-18	n,	1/4	27	2	Jackshaft	A&B, 3½ Ton, 1919 2½	2 1/4	60		Internal
King Truck, 31/2 To	n,	74			Juckshare	T, 5 Ton, 1919 3	1/4	72		Internal
1911-18	31/2	1/4	22	4	Rear Wheel	Lexington-Howard 6-				ALCOHOLD STREET
Truck, 1915	2	32	3176		Internal	N, 1916 13/	1 32	151/2	8	Internal
Truck, 1915 Truck, 1916	2	32 1/8	36% 18%	2	External Transmission	Lexington-Howard 6- N, 1916				External
Truck, 1916	2	afu.	411/4	2	Rear Wheel	Lexington-Howard 6-			STOR	LACCITAL
8, 20	21/2	182	48		External	O, 1916 13	4 1/8	33	2	Internal
8, 20	21/4	d'a	46%		Internal	Lexington-Howard 6-				minust
Kissel Kar 4-36, 6-4	12.					O, 1916 2 Lexington-Howard 6-	32	35	2	External
4-32, 1915-16,	2	The state of	341/2	2	Internal	O, 1917 13	4 1/8	33	2	Internal
							7.6	-	10000	

# PLEASURE AND COMMERCIAL CAR BRAKE LINING DATA.

Siz	e of Brake-	ANL	COMMERCI	AL CAR BRARD DINI		of Brai	ke		
	Lining	No.				Lining		No.	
Car Model Year Wdth	. Thick- Lgth		Type of	Car Model Year	Wdth.		Lgth.	of	Type of
	ness	Pcs.	Brake	McFarlan Six, All		ness		Pcs.	Brake
Lexington-Howard 6- O, 1917 2	f2 35	2	External*	Models, 1916		. re	48	2	Internal
Lexington-Howard 6-	32 00	-	LACCINAL	McFarlan Six, All			-		- Incertifier
P, 1917 2½	f2 45½	2	Internal	Models, 1916	23/8	re	51	2	External
Lexington-Howard 6-				McFarlan Six, All					
P, 1917 2½	re 48	2	External	Models, 1917-18-19-		3	101/	0	T
Lexington-Howard 6-	3 40	0	P-4	McFarlan Six, All		16	491/2	2	Internal
C, D, 1917 2½ Lexington-Howard 6-	re 48	2	External	Models, 1917-18-19-					
E, M, 1917 2½	f2 451/2	2	Internal	20		372	54	2	External
Lexington-Howard 4-	32 20/2								
Н, 1917 13/4	32 151/2	8	Internal	Mack-					
Lexington-Howard 4-				AB1½, 2 ton, Chain, 1916-20		1/4	121/4	2	Internal
K, 6-L, 6-N, '17 13/4	$\frac{5}{2}$ $15\frac{1}{2}$	8	Internal	AB1½, 2 ton, Chain,		74	1274	-	Internal
Lexington-Howard 6- O, 1917	1/8 33	2	Internal	1916-20		1/4	161/2	4	External
Lexington-Howard 6-	78 00	-	Internal	AB11/2, 2 ton, Worm,					
0, 1917 2	d 35	2	External	1916-20		1/4	13	4	Int. & Ext.
Lexington-Howard 6-				AB Tractor, 5 ton,		16	101		
0, 1917-18 13/4	1/8 33	2	Internal	AB Tractor, 5 ton,		1/4	121/4	2	Internal
Lexington-Howard 6-	£ 25	0	External	1916-20		1/4	161/2	4	External
O, 1917-18 2 Lexington-Howard 6-	32 35	-2	External	AC 31/2 to 71/2 ton,				Min.	2011
O, 1918 2	£2 38	2	Internal	1916-20	3	1/4	161/3	4	Internal
Lexington-Howard 6-			Sell agues	AC 3½ to 7½ ton,		17	001	1	13
0, 1918 2	\$2 24	2	External	1916-20 AC Tractor, 7 to		1/4	201/2	1	External
				15 Ton, 1916-20		1/4	16 <sup>1</sup> s	1	Internal
R19, 1919 174	8 33		Internal	AC Tractor, 7 to		*	10.5		· · · · · · · · · · · · · · · · · · ·
R19, 1919 2	32 35		External	15 ton, 1916-20		1/4	201/2	4	External
S, 1920 5 S, 1920 2	32 45 32 241/2	.Val	External Internal	- Introduction					
0, 1020	32 24/2	Cal	Tireer man	Marmon 41, '14-15-16		16	49	2	Internal
Liberty 10 A, 1916-19 118	10 37 1c	2	External	Marmon 41, '14-15-16 Marmon 34, 1916-19		16 3	53½ 47⅓	2 2	External Internal
Liberty 10 A, 1916-19 21/2	13 23 16		External	Marmon 34, 1916-19.		16 3 16	54	2	External
Liberty 10B, '17-18-	2 0-2		-	Marmon 34, 1920		ya.	4714	2	Internal
19 118	1°c 37 1°c	2	External	Marmon 34, 1920		d.	54	2	External
Liberty 10B, '17-18- 19 2½	13c 23 13c	1	External		11/	3			
10	16 2016	Chy w	Lakternar	Maxwell 25, 1915		16	15	4	Internal
Liberty-				Maxwell 25, 1915 Maxwell 25, '16-17		1.6 1.6	34% 15	2 4	External Internal
Six 10A, 1920 118	16 37 16		External	Maxwell 25, '16-17		16	341/8	2	External
Six 10A, 1920 21/2	16 23 16		Internal	Maxwell 25, 1918		18	15	4	Internal
Six 10B, 1920 118	37 Å		External Internal	Maxwell 25, 1918	11/2	16	34%	2	External
Six 10B, 1920 2½ Six 10C, 1920 1¾	76 23 16 16 40%		External	Maxwell Truck 1		3			
Six 10C, 1920 21/2	16 23 ld		Internal	Ton, 1917	11/4	16	16	4	Internal
				Ton, 1917	11/4	16	16	4	External
Locomobile M5, 6, 7,			all mail and	Maxwell 1 Ton, '18		16	16	4	Internal
1915-16-17 21/2	re 14½	4	Internal	Maxwell 1 Ton, '18	13/4	18	16	4	External
Locomobile M5, 6, 7,	is 48%	2	External	1½ Ton, 1917-20	1%	16	16	-1	Int. & Ext.
1915-16-17 3 Locomobile M48, 1918	16 48%		LACCING	25, 1919, Passenger		16	15		Internal
Locomobile R38, 1918			******	25, 1919, Passenger		16	34% 38%		External External
Locomobile Truck 5		1-19	Moraland Tow	1920	- 13 /	16	191/2		Internal
Ton, 1912 3	r <sup>3</sup> 6 16%	4	Jackshaft			- 10	1	-i=A	THE PARTY OF
Locomobile Truck 5	3. 171/	1	Rear Wheel	Menominee— FWHD, 1916-7	31/4	1/4	12	8	
Ton, 1912 4½ Locomobile Truck	3c 171/s	4	Kear Wheel	G, 1916-17			131/2	8	
B3, BB4, 1915-16 4	3 20 ·	4	Internal	G. 1918-19		1/4	16	8	
Locomobile Truck	10 -0	2101		EW, 1917-18		1/4	12	8	
B3, BB4, 1915-16 41/2	re 71/4	2	External	Hurryton, 1919			12	8	
Locomobile Truck 3-4				J. 1917-18-19		1/4	18½ 18½	8	
Ton, 1917	** ::::		Yatamal	J2, 1919 HD, 1918-19	31.	1/4	131/2	8	
2-38, 2-48, 1918 21/2	16 14½ 3 14½		Internal Internal	HT1, 1918-20	31/4		12	8	External
38-2, 1919	3 48%		External	H1½, 1916-20	31/2	1/1	131/2	8	External
11-48, 1919 21/2	3 14½		Internal	D2, 1915-20	31/2	1/1	131/2	8	External
11-48, 1919 3	18 481/2		External	G3½, 1916-20	3 1/2	1/4	16	8	External
48, Series 7, 1920 3	3 971/4		External	J5, 1917-20	91	74	18½ 47½	8 2	External External
48, Series 7, 1920 21/2	3 57%		Internal	HT1, 1920, late HT1, 1920, late	21/2		331/4	2	Internal
Lucdingham				H1, 1920, late	23/2	A	47 %	2	External
K2, 1919-20 2 <sup>1</sup> / <sub>2</sub>	1/4 53 4/1	0 2	External	H1, 1920, late	21/2	3	33 🔠	1	Internal
K2, 1919-20 2½	1/4 381/2		Internal	D2, 1920, late	21/2		571/2	2	External
K2LS, 1920 2½	1/4 53 4/1	0 2	External	D2, 1920, late	21/2		421/2	2	Internal
K2LS, 1920 2½	1/4 381/2		Internal	G3½, 1920, late	7.6	1.6	5714	2	External

	PLEAS	JAUG	AND	COM	MERCIAL CA.	R BRAKE LIMING D					
		of Bra	ke-					of Bra	ke	No.	
o was w		Lining		No.	M	Con Madel Voor		Lining	Lath	of	Type of
Car Model Year	Width.		Lgth.	-	Type of	Car Model Year	wath.		Ligin.	Pos.	Brake
Manaminas		ness		Pos.	Brake			ness		1 00.	Diane
Menominee-						Monarch Truck A,			0.17/		Section.
G3½, 1920, late	21/2	re	421/2	2	Internal	1011-10		32	341/4	2	External
J5, 1920, late	31/2	Ťi.	6916	2	External	Monroe, All Models,	11/	5	0021	0	7
J5, 1920, late	21/2	16	52	2	Internal	1915-16		32	2831	2	Internal
						Monroe, All Models,	11/	5	075/	0	-
Mercer 22-70, 22-72,	,					1915-16	13/	32	27%	.2	External
22-73, 1915-16-17	21/2	16	47	4	Rear Wheel	Н, 1917		32	32	1	Internal
Mercer 22-70, 22-72,	,					Н, 1917	- 4	32	341/4	1	External
22-73, 1915-16-17	21/2	16	12	2	Transmission	Roadster, 1917			33		Internal
Mercer 22-74, All						1919 1919		16	-		External
	21/2	130	17%	4	Rear Wheel			16 16	34 34		External
Mercer 22-74, All	1					1920 1920		16	311/2		Internal
Models, 1918	. 21/2	10	12	2	Transmission	1920	1/4	16	01/2		Internal
1915	. 2	32	18	4	Internal	Moon					
1915	. 21/2	16	10	2	External	39, 1914	21/4	16	46	4	Rear Wheel
1919	. 21/2	Te	12		External	42, 1914-15		10	40	4	Rear Wheel
1919	. 21/2	16 -	. 17%	4.	External	6-40, 1915-16	. 2	76	40	4	Rear Wheel
N						6-30, 1916	. 2	To .	40	4	Rear Wheel
Milburn Truck 21, 22		5	241/	0	Tutumal	6-43, 1917	. 2	16	40	4	Rear Wheel
27, 30, 31, '15		32	341/4	2	Internal	6-66, 1917	21/	16	40	4	Rear Wheel
Milburn Truck 21, 22		5	207/	9	External	6-50, 1915-16		16	46	2	Internal
27, 30, 31, '15		32	32%	2	External	6-50, 1915-16	2/4	70	46	2	External
Milburn Truck 15		.5	241/	9	Internal	6-50, 1914-15-16	. 2	16	40	4	Rear Wheel
151, 1916-17 Milburn Truck 15		32	341/4	2	Internat	6-66-19, 1919	. 2	16	37		Internal.
Milburn Truck 15		.5.	321/s	2	External	6-66-19, 1919	11/	76	42		External
151, 1916-17	. 174	32	0278	2	External	Victory, 1919		16	41		Internal
Militaire S, 16-17	. 1	1/8	65%	2	Internal	Victory, 1919		16	42		External
Militaire S, 16-17		1/8	193/8	2	External	6-48-20, 1920		16	41		External
						6-48-20, 1920	. 1/2	Ye	41		Internal
Mitchell B 35, 45	5,					Moreland Truck 16N	,				
1915	. 11/2	16	40	2	Internal	3/4 Ton, '16-17	2	136	101/4	8	Int. Exp.
Mitchell B 35, 45	5,					Moreland Truck 16D	,				
1915	. 2	16	44	2	External	1 Ton, '16-17	. 31/4	1/4	12	8	Int. Exp.
Mitchell C 42, 1916.		T'e	40	2	Internal	Moreland Truck 15B					
Mitchell C 42, 1916.		Te	44	2	External	1½ Ton, 15C 2½					
Mitchell C 42, 1917						Ton, '16-17	. 31/4	1/4	12	8	Int. Exp.
18		16	40	2	Internal	Moreland Truck 15G	,				
Mitchell C 42, 1917					The Property of	4 Ton, '16-17	. 33/4	1/4	131/2	8	Int. Exp.
18		1,g	391/2	2	External	Moreland Truck 16J	,				
Mitchell D 40, 191				-	102 ST. ST. ST. 17	5 Ton, 1916-17-18	. 4	1/4	18	8	Int. Exp.
18		32	351/4	2	Internal	Moreland Truck 16D	,				
Mitchell D 40, 191			001/			1 Ton, 1918	. 31/4	1/4	12	8	Internal
18		10	381/2	2	External	Moreland Truck 15B					
C40, C42, 1919		16	40		Internal	1½ Ton, '18	. 31/4	1/4	12	8	Internal
C40, C42, 1919		16	391/2		External	Moreland Truck 15G	,				
F40, 1920		36	40%		External	4 Ton, '18	. 33/4	1/1	16	8	Internal
F40, 1920	172	Ag.	40		Internal	Moreland Truck 15C					The state of the s
Moline Knight (						2½ Ton, '18	. 31/2	1/4	$13\frac{1}{2}$	- 8	Internal
1916	. 13/4	130	411/2	2	Internal	Moreland Truck,					
Moline Knight (			/-	100		Ton 17N, 11/2 Ton	n				200000000000000000000000000000000000000
1916	2	136	421/2	2	External	17B, '17-18	31/2	1/4	12	4	Internal
Moline Knight			1819			Moreland Truck, 21/				1100	
'17 Timken Axle		16	40	2	Internal	Ton 17C, '18		1/4	12	4	Internal
Moline Knight						Moreland Truck,		1/	1017	-	Y 20184
'17 Timken Axle	2	130	421/2	2	External	Ton 17G, 1918		1/4	$13\frac{1}{2}$	4	Internal
Moline Knight	C,					Moreland Truck 17J		1/			- Crair in
1917, Weston Mo						5 Ton, 1918		1/4	18	4	Internal
Axle		120	411/2	2	Internal	19B, 1½ Ton, 1918		1/	10		Y . 0 Th
Moline Knight	C,					20		1/4	12	4	Int. & Ext.
1917, Weston Mo	tt					19C, 2½ Ton, 1918		1/	191/		Tat 0. That
Axle	2	16	421/2	2	External	20		1/4	131/2	4	Int. & Ext.
Moline Knight	G,					19G, 4 Ton, 1918-2		1/4	16	4	Internal.
1917	2	re	40	2	Internal	19G, 4 Ton, 1918-2		3/4	16	4	External
Moline Knight	G,		100		100000000000000000000000000000000000000	19J, 5 Ton, 1918-2		1/4	18	4	Int. & Ext.
1917	2	16	421/2	2	External	Nash 2017, 1917	. 2	16	401/4	2	Wheel
Moline Knight 1918	L,	1			A SASTED BEING	Nash 2017, 1917	. 21/2	13c	207		Transmission
1918	. 2	16	40	2	Internal	Nash 3017, 1917	. 3	16	50%	2	Wheel
Moline Knight	L,	1 4				Nash 3017, 1917		13	20 70		Transmission
1918	2	1,6	421/2		External	Nash 671, 1917-18	. 2	136	4011		Wheel
G, 1919			411/		Internal	Nash 671, 1917-18	. 21/2	73c	2017		Transmission
G, 1919		re	421/	2	External	Nash Quad 4017, 1917	7-				
L, 1919		76	40		Internal	18		1/4	491/4	4	Wheel
L, 1919	2	18	421/	2	External	Nash Quad 4017, 191					
Moline Universal					and the same	18	. 21/2	1/4	2576	1	Transmission
Tractor	1%	1,6	223	2 1	Exp.	Nash 681, 1918	. 2	16	4033		Wheel

I	PLEAS	URE	AND	COM	MERCIAL CA	R BRAKE LINING DA					
		e of Br						of Bra	ike-		
Cor Model V		Lining		No.	m	Car Model Veer	Wdth.	Lining	Tath	No.	Tunnet
Car Model Year	watn.			of	Type of	Car Model Year	wath.	ness	Lgtii.	of Pcs.	Type of Brake
		ness		Pcs.	Brake						
Nash 681, 1918	$2\frac{1}{2}$	136	1811	1	Transmission	Oakland 32B, '16		32	351/4	2	External
Nash 2018, 1918	2	130	401/4	2	Wheel	Oakland 38, 1916		32	343/4	2	Internal
Nash 2018, 1918	$2\frac{1}{2}$	Ye	2016	1	Transmission	Oakland 38, 1916		32	351/4	2	External
Nash Truck 3018,						Oakland 50, '16-17		32	4018	2	Internal
2018-1, 1919-20	2	16	481/s	2	External	Oakland 50, '16-17		32	4315	2	External
2018-1, 1919-20	21/2	16	2016	1	Internal	Oakland 34, 1917, 34B,	150	=	0-		
3018-2, 1919-20	. 3	16	50%	2	External	1918		32	35	2	Internal
3018-2, 1919-20	21/2	16	2016	1	Internal	Oakland 34, 1917, 34B,		5	0.12/		
4017-2, 1919-20		1/4	491/4	4	External	1918		32	34%	2	External
4017-2, 1919-20	21/2	1/4	2516	1	Internal	33-35		32	36	4	Rear Wheel
Truck-	0	3	F05/	0	NVI	36		32	36	2	Internal
3018, 1918		16	50%	2	Wheel	36		32	36	2	External
3018, 1918	2/2	16	2016	1	Transmission	48		32	43	4	Int. & Ext.
4017, 217		3	401/		Door Wheel	34B, 1919		32	35 34¾		Internal
1 Ton, 1919		76	491/8		Rear Wheel	34B, 1919		32			External
1 Ton, 1919	2/2	16			Transmission	34C, 1920		32 32	351/8		Internal
2 Ton, 1919 2 Ton, 1919	91/	16			Rear Wheel Transmission	34C, 1920	178	32	35%		External
Quad, 1919	21/2	16	2016			011 17 10 115	12/		0 = 5		
		1/4	491/4	4	Wheel	Oldsmobile 42, '15		32	35 %	2	Internal
Quad, 1919 681, 2, 4, 5, 6 and		1/4	2510		Transmission	Oldsmobile 42, '15		3,5	371/4	2	External
7, 1919	2	.3.	4013		External	Oldsmobile 43, '16		32	343/4	2	Internal
		Ye	4032		External	Oldsmobile 43, '16		32	353/4	2	External
681, 2, 4, 5, 6 and 7, 1919	21/	.3	18 11-12	1	Transmission	Oldsmobile 44, '16		32	35	2	Internal
681, 1920		16			Internal	Oldsmobile 45, '17		32	381/s	2	External
681, 1920		16	18 40		External	Oldsmobile 37, '17-18.		32	35	2	Internal
001, 1020		16	40		Lyxternar	Oldsmobile 37, '17-18.		32	381/8	2	External
National-						Oldsmobile 45A, 1918		32	4018	2	Internal
VV3, 1914	. 2	76	203/4	4	Internal	Oldsmobile 45A, 1918		. 2,5	43 18	2	External
VV3, 1914		3	4311	2	External ·	34 Ton, Economy,					Appendix 102
WAA-AB, 1914-15					Perfulentee feb.	1919		32	4116		Internal
16		130	481/4	2	Internal	34 Ton, Economy,		5	101/		-
WAA-AB, 1914-15					The sale of the off	1919		32	421/4		External
16	. 21/4	rig	501/4	2	External	37A, 1919		32	35		Internal
AEAH, 1917,			,			37A, 1919	178	32	381/8		External
ADAC, 1916	13/4	32	431	2	Internal	45B, 1919	174	32	381/4		Internal
AEAH, 1917,						45B, 1919		32	4316		External
ADAC, 1916	. 2	32	45	2	External	45B, 1920		32	43		External
AF, 1918		32	4316	2	Internal	45B, 1920		32	381/8		Internal
AF, 1918		32	45	2	External	37A, 1920 37A, 1920		3	38%		External
AK, 1918		32	4316	2	Internal	T¾, 1919-20		3.2 5	35		Internal
AK, 1918	. 2	32	45	2	External	T¾, 1919-20		32 5 32	421/4	1	External
AL and AM, 1919.	13/4	32	43 16		Internal	1 /4, 1919-20	2	32	4116	-1	Internal
AL and AM, 1919.		32	45		External	Overland 81, 1915	9	1s	91/s	4	Internal
National Truck,	1					Overland 81, 1915		16		4 2	Internal
1 Ton D, 1916-17.	21/2	1/4	19	8	Internal	Overland 82, '15 (		16 16	30% 13		External
National Truck,	2					Overland 84, '16)	21/4		441/2	4 2	Internal
Ton B, 1916-17	31/4	1/4	12	8	Internal	Overland 83, 1916		16		4	External
National Truck, 2						Overland 83, 1916	21/4	16	1016	2	Internal
Ton BA, 1917-18	31/2	1/4	131/2	8	Internal	Overland 75, '16)	13/4	16 16	121/2	4	External Internal
National Truck, 31/2					The state of the state of	Overland 90, '17	13/4	16	38	2	The state of the s
Ton C, '16-17	31/2	1/4	131/2	8	Internal	Overland 90B, '18	1/4	16	00	~	Externa!
National Truck, 31/2	2					Overland 86, '16	21/4	3 16	13	4	Internal
Ton CA, 1917-18	33/4	1/4	16	8	Internal	Overland 84, '17	21/4	13 To	441/2	2	
National Truck,	5					Overland 85-4, 85-6,	-74	16	1.12		External
Ton EA, 1918	. 4	1/4	181/4	8	Internal	1917	21/4	16	1013	4	Internal
Sextet, 1920	21/2	32	48		External	Overland 89, '18	21/4	16 16	41	2	External
Sextet, 1920		32	46%		Internal	Overland 90, '17	13/4	16 16	121/2	4	Internal
						Overland 90B, '18	13/4	16 16	38		External
Northwestern Truck						88-6, 88-8		16 3 16	13	4	Internal
A, 1915-16		16	42		Internal	88-6, 88-8		16 16	441/2	2	
Northwestern Truck					-	90, 1919		16 16	50		External
A, 1915-16	21/2	1/4	42		External	90, 1919	13/	16 3 16	76		Internal
Northwestern Truck			-			83, 1919			40%		External
W, '16-17	3	16	42		Internal	83, 1919		16			Internal
Northwestern Truck			1-		7		4/4	16	82		External
W, '16-17	3	1/4	42		External	Owen Magnetic M 25,					
Oakland 27 1015	13/	5	25.5	9	Internal	1915-16-17	21/2	136	44%	2	Internal
Oakland 37, 1915	17/8	32	3518	2		Owen Magnetic M 25,	110				
Oakland 49, 1915	1/8	32	371/4	2	External	1915-16-17	21/2	18	483/4	2	External
Oakland 49, 1915	178	32	4016	2	Internal	Owen Magnetic O-36,		100			
Oakland 32, 1916	1/8	3 <sup>5</sup> 2	42 re	2	External	1915-16-17	11/4	13	203/4	4	Int. Emer.
Oakland 32, 1916	17/8	37	34 16	2	Int. West.	Owen Magnetic O-36,	214		-		Trice.
Oakland 32, 1916	1 1/8	32	351/4	2	Ext. West.	1915-16-17	21/2	1 <sup>3</sup> c	203/4	4	Int. Service
Oakland 32, 1916	1/8	32	34 %	2	Int. West.	W42, 1919		16	0021		Internal
Oakland 32B, '16	1%	3,5	36	2	Ext. West.	W42, 1919		735	*A3/		External
Oakland 32B, '16	1 78	3,3	35	2	Internal						

		of Bra			III CINI	, с		-Size	of Bra	h		
		Lining		No.	713		Over Model Vers		Lining	Lath	No.	Tune of
Car Model Year	Wdth.	Thick- ness	Lgth.	of Pcs.	Type of Brake		Car Model Year	watn,	Thick- ness	Lgth.	of Pcs.	Type of Brake
	022		0011			17.	Daire H 6 6 26 /15	9		371/2		
Packard 238, 1914 Packard 238, 1914		1/4	33 11 15 82	2	(S. Long) (S. Sho't)		Paige H-6, 6-36, '15 Paige G-6, 6-46, '16		16 16	42	2	External Internal
Packard 238, 1914		16	471/2		Hand		Paige G-6, 6-46, '16		3 16	44	2	External
Packard 348, 1914		1/4	29 5	2	(S. Long)	Ft.	Paige H-6, 6-38, '16	2	32	351/4	2	Internal
Packard 348, 1914	23%	1/4	1432	2	(S. Sho't)	Ft.	Paige H-6, 6-38, '16		16	381/2	2	External
Packard 448, 1914	21/2	1/4	5332	2	Foot		Paige J-6, 6-51, '17		10	42 44	2 2	Internal External
Packard 448, 1914	21/	16	47½ 5332	2 2	Hand Foot		Paige J-6, 6-51, '17 Paige K-6, 6-39, '17	2	32	351/4	2	Internal
Packard 338, 1915 Packard 338, 1915	2 2	1/4	471/2	2	Hand		Paige K-6, 6-39, '17		3 16	38	2	External
Packard 548, 1915	21/2	1/4	5332	2	Foot		Paige M, 6-51, '18	2	130	42	2	Internal
Packard 548, 1915		36	471/2	2	Hand		Paige M, 6-51, '18		130	44	2	External
Packard 125, 1915-16-			*0.5		-		Paige P, 6-39, 1918		32	351/4	2	Internal
17		1/4	53 %	2	Foot		Paige P, 6-39, 1918		16 32	38 371/s	2 2	External External
Packard 125, 1915-16-	9	100	471/2	2	Hand		15-19		32	351/4	2	Internal
Packard 135, 225-235,			1.12	-	DOLL		16-19		in	44	2	External
1915-16-17	21/2	1/4	5332	2	Foot		16-19		The state of	42	2	Internal
Packard 135, 225-235,							2½ Ton, 50-18, 1919		1/4	131/4		Internal
1915-16-17		16	471/2	2	Hand	naldG	3½ Ton, 51-18, 1919 - 655, 1919		1/4 3 16	16 42		Internal Internal
325		16	47½ 53¾	1	Internal External		655, 1919		3 16	44		External
325		1/4	471/2	1	Internal		640, 1919		iles	351/4		Internal
325	21/2	1/4	5332	1	External		640, 1919		32	371/4		External
325, 335, 1918-19	21/2	1/4	53 8	1	Foot		50-18 21/2, 1920		1/1	19%	2	External
325, 335, 1918-19		16	471/2	1	Hand		50-18-21/2, 1920		1/4	49%	2	Internal
E, C, 1920		1/4	718	2 2	Internal		51-18-3½, 1920 52-19-1½, 1920		1/4	15%	1	Int. & Ext.
E, C, 1920 E, D, 1920	- 0 -	16	9%	2	External Internal		02-10-172, 1020	3/4	/4	11 2	,	THE CE LIKE.
E, D, 1920		16	17	2	External		Pathfinder 8A, B and					
E, F. 1920	61/2	1/4	916	2	Internal		C, 1915-16	21/4	1,6	42	2	Internal
G, E, 1920		16	183/4	2	External		Pathfinder 8A, B and		9			
E, F, 1920		1/4	916	2	Internal		C, 1915-16	21/4	16	44	2	External
G. E. 1920	572	र्गेंड	183/4	2	External		Pathfinder 6B, '15-16, 6L, 1916	91/	13 <sub>6</sub>	36	2	Internal
Packard Truck, 1-11/2-							Pathfinder 6B, '15-16,	-/4	16	00	~	Internat
2D, 1915	-	1/4	718	2	Foot		6L, 1916	21/4	- 1°C	48	2	Internal
Packard Truck, 1-11/2-							Pathfinder 1B, 2B,					122.
2D, 1915	. 2	1,6	14	4	Hand		1C, 2C, 1917	11/4	16	203/4	2	Dble. Int.
Packard Truck 3D,	27/8	1/.	03/	2	Foot		Pathfinder 1B, 2B,	11/	_3_	203/	9	Dhla Int
1915-16	278	1/4	9%	2	Poot		1C, 2C, 1917 Pathfinder 4, 1918		16 3	20 <sup>3</sup> / <sub>4</sub> 34 <sup>1</sup> / <sub>4</sub>	2 2	Dble. Int. Internal
D, 1915	3	ile	183/4	4	Hand		Pathfinder 4, 1918		16	46%	2	External
Packard Truck 4D,							Pathfinder 6, 1918		136	341/4	2	Internal
1915-16							Pathfinder 6, 1918	21/4	16	46%	2	External
Packard Truck 1-11/2		1/	-13		E			01/	7	.01/		GT 14. (II.)
2E, 1916-17 Packard Truck 1-1½		1/4	7 18	2	Foot		Peerless 48-6, 1915		32	401/2	2	Int. Exp.
2E, 1916-17		re.	14	4	Hand		Peerless 48-6, 1915 Peerless 54-55, '15	274	1/4 16	44 38¾	2 2	External Internal
Packard Truck 3E, ]			-				Peerless 54-55, '15	2	3 16	133/4	2	External
1916-17	43/4	. 1/4	9 %	2	Foot		Peerless 56, 1916 (	2	130	383/4	2	Internal
Packard Truck 31/2							Peerless 2-56, '17)	2	13c	433/4	2	External
D, 1916-17	, 3	16	17	4	Hand		Peerless 4-56, 1918		Ye	383/4	2	Internal
Packard Truck 4E		1/4	9%	2	Foot		Peerless 4-56, 1918		3 16	433/4	2	External Internal
Packard Truck 4E		-	0.16	77			5th Series, 56, 1919 5th Series, 56, 1919		16 16	38¾ 19¼		External
1916-17		ie.	183/4	4	Hand		6th Series, 56, 1920		3 16	381/2		Internal
Packard Truck 5-6E					-		6th Series, 56, 1920		130	383/4		External
1916-17 Toward Towards 5 GF		1/4	916	2	Foot		Peerless Truck T					
Packard Truck 5-6E 1916-17	31/	5.	183/4	4	Hand		C, 3 Ton, 1915	31/4	32	20	4	Emergency
1½ Ton, 1919		รัช รัช	28		Internal		Peerless Truck T C, 4 Ton, 1916	4	1/4	371/	2	Service
11/2 Ton, 1919		1/4	15%		External		Peerless Truck T	1	/4	371/8	2	Service
2 Ton; 1919	. 2	16	28		Internal		C, 5 Ton, 1917	33/4	3/8	2333	4	Emergency
2 Ton. 1919	. 4%	3/4	15%		External		Peerless Truck T	1				A THE REAL PROPERTY.
3 Ton. 1919		18	34		Internal		C, 6 Ton, 1918)	4	1/4	371/8	2	Service
3 Ton, 1919		1/4	191/s	**	External		Pierce Arrow 6-66-A3,					
4 Ton, 1919 4 Ton, 1919		1/4	37½ 19⅓		External External		1915	31/4	re re	20%	4	External
5 Ton, 1919		74 26	371/2		Internal		Pierce Arrow 6-48-B3,			/8		
5 Ton. 1919		1/4	191/8		External		1915	3	36	1710	4	Internal
6 Ton. 1919	. 31/2	ile.	371/2		Internal		Pierce Arrow 6-48-B3,		5			
6 Ton. 1919	. 61/2	3/4	191/8		External		1915 Pierce Arrow 6-38-C3,		1,6	1816	4	External
Paige G-6, 6-46, '15	. 13/4	1/2	423/4	2	Internal		1915		rate are	1418	4	External
Paige G-6, 6-46, '15	. 2	re	45%	2	External		Pierce Arrow 6-38-C4,			16		
Paige H-6, 6-36, '15	. 2	32	351/4	2	Internal		1916	23/4	3	131/4	4	Internal

		CON	IMERCIAL CA	AR BRAKE LINING DA				
S	ize of Brake			*		f Brake		
Car Model Year Water	Lining	No.	T	Car Model Year	Volth T	ining hick- Lgt	No.	Tuna of
Wa	th. Thick- Lath.		Type of			iess	h. of Pcs.	Type of Brake
	ness .	Pes.	Brake					-
Pierce Arrow 6-38-C4,			and the same	Premier 6C, 1918		16 43	9.7	External
1916 3	rb 1418	4	External	6C, 1919		38	*/	Internal
Pierce Arrow 6-48-B4,	3 1-1		T	6C, 1919 6D, 1920	21/.	16 43 49		External
1916 3	帝 17治	4	Internal	6D, 1920	21/	#2 49°		External Internal
Pierce Arrow 6-48-B4, 1916 3 <sup>1</sup> / <sub>4</sub>	18 18 18 18 18 18 18 18 18 18 18 18 18 1	4	External	017, 1020	-	10		internal
Pierce Arrow 6-66-A4,	16 1016	4	Externat	Pullman 4, 1914-15-16.	1%	32 27		Internal
1916	å 19½	4	Internal	Pullman 4, 1914-15-16.	17/4	313	/s 2	External
Pierce Arrow 6-63-A4.	10 1071	101	4	Pullman 4-24, 6-28,				
Pierce Arrow 6-63-A4, 1916 31/4	. 16 20%	4	External	1917	1%	32 35	4 2	Internal
Pierce Arrow 6-38-C4,			diam't a second	Pullman 4-24, 6-28,	+27/	5 0=	7	
Pierce Arrow 6-38-C4, 1917 23/4	n 13%	4	Internal	1917		n 37		External
Pierce Arrow 6-38-C4, 1917 3				Pullman Truck 4-24	* * *			
1917 3	ris 1418	4	External	Reo R. & S. 1912-13-				
Pierce Arrow 6-48-B4, 1917 3		IL, M	division in the	14-15-16-17	2	75 38	2	Internal
1917 3	re 1618	4	Internal	Reo R. & S. 1912-13-				
Pierce Arrow 6-48-B4,	3 10 3		71.	14-15-16-17		rk 43	2	External
1917 31/	re 1876	4	External	Reo J, 1914-15		is 33		Jackshaft
Pierce Arrow 6-66-A4,	3 10	,	Tutomol	Reo J, 1914-15	2	rs 51		Hub
1917 3	re 19	4	Internal	Reo L, 1915		16 38		Internal
Pierce Arrow 6-66-A4, 1917 3½	i i 20%	4	External	Reo L, 1915		16 43	2	External
1917 37.	1 18 20%	4	External	Reo M-N, 1915-16-17		38		Internal
Pierce Arrow-				Reo M-N, 1915-16-17		16 43	2	External
C5, 1917 25	1 11 13%	4	Internal	Reo J, 1916-17		16 331		Jackshaft
C5, 1917 3	re 1418	4	External	Reo J, 1916-17 Truck F, 1915-16-17	9	1/4 52 38	2 2	Hub
B5, 1917 3	in 1632	1	Internal	Truck F, 1915-16-17		15 38 15 43	2	External
B5, 1917 31/	18 18 18	4	External	Truck F, 1914		16 43 16 33!		Jackshaft
A5, 1917 3	is 19	4	Internal	Truck F, 1914		is 511		Rear Axle
A5, 1917 3½	i i 30%	4	External	1915-16		3 40	2	Internal
38 H. P., 1919 3	16 1618		Internal	1915-16		ä 43	2	External
38 H. P., 1919 31/			External	Ton Model F,	-		7.7	
48 H. P., 1919 3	i 19		Internal	1919	2	n 38	lä	Internal
48 H. P., 1919 31/	4 1 20%		External	7 Ton Model F,				
Pierce Arrow Truck,	3 -1/		Committee	. 1919	21/4	is 43		External
All Models, 2 Ton. 31	71/4	2	Service	F, 1919	2	is 38	18	Internal
Pierce Arrow Truck,	3 1913	100	P	F, 1919	21/4	18 43		External
All Models, 2 Ton. 3	13 ta	4	Emergency		2	38	18	Internal
All Models, 5 Ton. 5	1k 884	9	Service	Т, 1919		ra 43		External
Pierce Arrow Truck,	th Sat	2	Service	F, 1500 Ibs., 1920		16 . 43	1	External
All Models, 5 Ton. 4%	32 18	2	Emergency	F, 1500 lbs., 1920		18 311	2 2	Internal
2 Ton X4, 1919 3			Internal	T, 1920		16 43		External
2 Ton X4, 1919 5	16 Se4		External	Т, 1920	2	is 31	2	Internal
5 Ton R9, (1919 45)			Internal	D. I.P. Wanter				
5 Ton R9, 1919 31			External	Republic Trucks			Fill I	
6-42, 1920 2	32 37½		External	Model T, 1917		1/4 591		Emergency
6-42, 1920 2	351/4		Internal	Model T, 1917		1/4 611		Service
6-66, 1920	16 431/2		External	Model 12, 1917	21/4	16 521	5 2	Emergency
6-66, 1920	nh 411/4		Internal	Model 12, 1917		16 54		Service
5, 1920			Internal	Model 11, 1917	274	sh 43 1		Emergency
5, 1920 4	72 18	4	External	Model 11, 1917		da 45	2	Service
2, 1920 5	3 Ser		Internal	Model 10, 1917		ab 43 1		Emergency
2, 1920 3	3 1813		External	Model 10, 1917	3	45 45 295	2	Service
48 H. P., 1920 31			External	Model 9S, 1917 Model 9S, 1917		1721 Profession		Emergency
48 H. P., 1920 3	18 38		Internal ·			da 421 da 295		Service
38 H. P., 1920 31/			External	Model 9, 1917 Model 9, 1917		16 297 12 421		Emergency Service
38 H. P., 1920 3	ib 33		Internal	Model TX, 1918		in 301		Emergency
D2 - 0		14.7		Model TX, 1918	31.	i 553		Service
Pilot 6-45, 1916-17-18. 13		1	Internal	Model 12X, 1918	21/	in 521	2	Emergency
Pilot 6-45, 1916-17-18. 2	is 34	1	External	Model 12X, 1918		i 54	2	Service
6-45, 1919	411/2		Internal	Model 11X, 1918		i 521		Emergency
6-45, 1919	å 41½		External	Model 11X, 1918		na 54	2	Service
6-45, 1920	441/2		External	Model 10X, 1918	21/4	A 43 1		Emergency
6-45, 1920	4 411/2	10.	Internal	Model 10X, 1918	$2\frac{1}{2}$	\$ 45	2	Service
Premier 6-50, 1915-16. 21/	3 44%	2	Internal	Model 10, 1918	$2\frac{1}{4}$	de 43 i		Emergency
Premier 6-50, 1915-16. 21/		2	External	Model 10, 1918	$2\frac{1}{2}$	3 45	2	Service
Premier 6-B, 1917,	10/3	111111	CONTRACTOR OF THE PARTY OF THE	Model 9S, 1918	3	i 295		Emergency
first 1,970 cars 2	il 401/4	2	Internal	Model 9S, 1918	2	de 425		Service
Premier 6-B, 1917,	1074		Ele	Model 9, 1918	3	na 295		Emergency
first 1,970 cars 2	ra. 43%	2	External	Model 9, 1918		de 421		Service
Premier 6-B, 1917,	- 17			Model 20, 1919		301		Emergency
after first 1,970 cars 2	76 401/4	2	Internal	Model 20, 1919		16 55%		Service
Premier 6-B, 1917,				Model 19, 1919	274	1 521 3 543		Emergency
after first 1,970 cars 2	ra 43%	2	External	Model 19, 1919	2/2	16 54 521		Service
Premier 6C, 1918 2	in 38%	2	Internal	Model 11X, 1919		16 040	-	Emergency

•	-Size			.0111	II DICIND	-	,			-Size	e of Br	ake—		
	I	ining		No.							Lining	Loth	No.	Type of
Con Madal Voor	Wdth.		Lgth.		Type of Brake		Car . M	odel	Vear	watn.	Thick- ness	Lgth.	of Pcs.	Type of Brake
Car Model Year		ness		Pcs.	Diake			ouci	1 041		11000		- 00,	Territoria de la companya della companya della companya de la companya della comp
Republic Trucks— Model 11X, 1919	21/2	10	54%	2	Service		Schact—	n. 191	9-20	31/2	1/4	81/2	4	Internal
Model 16, 1919	21/4		43 16	2	Emergency		5 Ton	, 1919	-20	4	3/8	15	4	External
Model 16, 1919	21/2	32	45	2	Service		5 Ton	. 1919	-20	31/2	1/4	81/2	4	Internal
Model 10, 1919	21/4	32	43 to	2 2	Emergency Service		Scripps-B	ooth !	1015	13%	1/8	81/2	4	Internal
Model 10, 1919 CDLM	21/2	32 16	42	2	Internal		Scripps-B	ooth	C. 1915	11/2	1/8	211/8	2	External
CDLM	2	16	30	2	External		Scripps-B	ooth (	C, 1916	1%	32	2831	2	Internal
F, 3/4 Ton	2	10	44	2	Internal		Scripps-B	ooth	C, 1916	1%	32	271/8	$\frac{2}{2}$	External
F, % Ton	21/2	16	43 491/2	2 2	External Internal		Scripps-B Scripps-B	ooth l	0, 1916	2	32 .	27% 32	2	Internal External
E, 1 Ton, A, 2 Ton E, 1 Ton, A, 2 Ton	3	1/4	50	2	External		Scripps-B	ooth (	G. 1917	15/8	32	2831	2	Internal
T, 3 Ton							Scripps-B	ooth (	G, 1917	1%	32	271/8	2	External
10-1, 1919-20	21/2	32	45	2	External		Scripps-B	ooth l	H, 1917	1%	32	271/8	2	Internal
10-1, 1919-20 11X-1 <sup>1</sup> / <sub>2</sub> , 1919-20	21/4	32 1/4	43 54¾	2	Internal External		Scripps-B 6-39, 19	ooth I	H, 1917	17/0	32 32	$\frac{32}{34\frac{3}{4}}$	2	External Internal
11X-1½, 1919-20	21/4	3 16	521/8	2 2	Internal		6-39, 19	19		1%	32	35		External
19-21/2, 1919-20	21/2	re sir	543/4	2 2	External		B39, 19	920		11/8	32			Internal
19-21/2, 1919-20		16	521/8		Internal		B39, 19	920		1%	32	35%		External
20-3½, 1919-20 20-3½, 1919-20	41/2	16 16	55% 31	2	External Internal		Selden T	ruck	TT. 1					
			461/2	2	Internal		Ton, 19	16		31/4	1/4	241/4	4	Internal
Sanford Truck R Sanford Truck R	2	16 16	48%	2	External		Selden T	ruck	TL, 1					
Sanford Truck S	21/2	16	481/2	2	Internal		Ton, 19	16		31/4	1/4	241/4	4	External
Sanford Truck S	3	13	50%	2	External		Selden Ton, 19	ruck .	ICL, I	2	3	46	2	Internal
Sanford Truck W-35.		1/4	56%	4	Double Int.		Selden T	ruck	CL. 1	Tiq.	10	10	~	Tirect man
Sanford Truck 2½ Ton, 25, 1918		372	50	4	Int. Ext.		Ton, 19	16		3	16	503/4	2	External
Sanford Truck 3½	-/4	3.2	00		-		Selden T	ruck J	WL, 2	03/	1/	193/	0	Y41
Ton, 35, 1918	21/2	32	55	4	Int. Ext.		Ton, 19			2%	1/4	43¾	2	Internal
Sanford Truck, 5							Selden Ton, 19	116	W 11, 2	23/4	1/4	$52\frac{1}{2}$	2	External
Ton, 50, 1918		1/4	75	4 2	Int. Ext.		Selden T	ruck	JC, 2					
¾ Ton	21/2	16	48 42	2	Internal External		Ton, 19	)16		2	16	46	2	Internal
25, 21/2 Ton, 1917-		2.0	-	-			Selden T	ruck	JC, 2	3	3 18	541/4	2	External
20	21/4	1/4	511/2	2	Internal		Ton, 19 Selden T				16	01/4	-	Дисства
25, 2½ Ton, 1917-	91/	.5.	511/2	2	External		Ton, 19			31/2	1/4	26%	2 .	Internal
20		16	31/2	-	Lacernai		Selden T			21/	1/	003/	0	The same of
20	21/2 .	1/4	56	2	Internal		Ton, 19		- 10/	31/2	1/4	$26\frac{3}{8}$	2	External
W35, 31/2 Ton, 1917			-0		F		Selden Ton, 19	116	G, /4	13/4	16	16	4	Internal
20 W50, 5 Ton, 1917		16	56	2	External		Selden T	ruck	G, 3/4					
20		1/4	69	2	Internal		Ton, 19				16	16	4	External
W50, 5 Ton, 1917		-					Selden T	ruck (	3, 1917	13/4	16	16 <sup>1</sup> / <sub>4</sub> 16 <sup>1</sup> / <sub>4</sub>	2	Service Emergency
20		re .	69	2	External		Selden 7	Truck	TXL.	1/4	18	10/4	2	Emergency
Saxon 4, 1917	11/4	1/8	211/2	2 2	Internal		Selden 7			21/2	10	421/2	2	Service
Saxon 4, 1917 Saxon 6, 1917		1/8	$\frac{21\frac{1}{2}}{24}$	2	External Internal		Selden 7	Cruck	TXL,	1/2/	3	001/	0	T.
Saxon 6, 1917		1/8 1/8	301/2	2	External		1917 Selden	Truck	TC	1%	Je .	$38\frac{1}{2}$	2	Emergency
Saxon 6, S4, 1918	13/4	16	351/4	2	Internal		Selden 1917	1140	. , ,	3	r <sup>3</sup> c	561/2	2	Service
Saxon 6, S4, 1918		16	3716	2	External		Selden 1917	Truck	JC,					
Saxon 6, T18, 1918 Saxon 6, T18, 1918		16	35¼ 37 %	2 2	Internal External		1917			2	16	531/4	2	Emergency
Y19, 1919		16	351/4		Internal		Selden 1917	Truck	TL,	91/.	3°	12	2	Emergency
Y19, 1919	. 11/8	16	37 re		External		Selden	Truck	TL.	2/4	16	12	2	Linergency
Schacht Truck, 2-		.,	*01/				1917			21/4	18	12	2	Service
Ton, 1914-17		1/4	521/2	2	Internal		Selden 7	Truck	JWL,	01/	3	101/	0	0 100
Schacht Truck, 2-3		fe	52	2	External		1917 Selden 7	Cruok	TWIT	31/2	16	131/4	2	Service
Schacht Truck,	2						1917	LIUCK	J W 14,	31/2	r <sup>3</sup> c	133/4	2	Emergency
Ton, 1918	. 3	1/4	131/4	4	Internal		Selden	Truck	NL,					
Schacht Truck,	2 21/	1/	0	9	External		1917			33/4	16	16	2	Service
Ton, 1918 Schacht Truck,	3	1/4	9	2	External		Selden	Truck	NL,	23/	3.	16	9	Emergency
Ton, 1918		1/4	9	4	External		1917 Selden				Ye	16	2	Emergency
Schacht Truck,	5						1918				3e	46	2	Internal
Ton, 1918		3/8	15	4	Internal		Selden 7	Truck	TXL,					
Schacht Truck,	5	1/	0	1	External		1918				16	503/4	2	External
Ton, 1918 2 Ton, 1919-20		1/4	9 131/2	4	External External		Selden 7 1918				1/4	11%	8	Int. Ext.
2 Ton, 1919-20	. 31/2	1/4	81/2	4	Internal		Selden '	Truck	JCB,		/4	11/4	9	THE TANK
2½ Ton, 1919-20	. 3	Po	131/2	4	External		1918			2	3g	46	2	Internal
2½ Ton, 1919-20 3½ Ton, 1919-20.	3/2	1/4	$8\frac{1}{2}$ $13\frac{1}{2}$	4	Internal		Selden '				_3	541/	0	Determe!
372 101, 1919-20.		3.6	10/2	4	External		1918			0	76	541/4	2	External

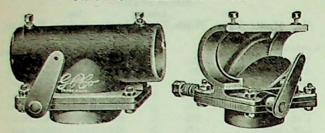
PLEASI	URE AND	COM	MERCIAL CAR	BRAKE LINING			).	
	e of Brake-	NT-				of Brake— Jining	No.	
Car Model Year Wdth	Lining Thick-Lgth	No. of	Type of	Car Model Year				Type of Brake
	ness	Pcs.	Brake	Standard—		ness	1 03.	Diake
Selden Truck JWB,	1/ 19.3	0	Int Est	3½ Ton, 1918	. 31/2	rie 15½	8	Exp.
1918	1/4 13 rs 1/4 15 %	8 8	Int. Ext. Int. & Ext.	5 Ton, 1917-18		re 18	8	Exp.
DL, 1918 4	1/4 17 16	8	Int. & Ext.	3 Ton 8I, 1920	91/	i		Int. & Ext.
3/4 Ton	16 38	2	Internal	IK1, 1920		½ 10%	4	Int. & Ext.
34 Ton 2½ TXL, 1 Ton, 1919. 1¾	13g 42 13g 39	2	External Internal	76-21/2, 1920	. 31/2	1/4 13 13	4	Int. & Ext.
TXL, 1 Ton, 1919. 21/2	16 42½		External	66-31/2, 1920	. 3%	1/4 15% 1/4 17†8	. 4	Int. & Ext. Int. & Ext.
TXR, 1 Ton, 1919 2	16 46		Internal	86-5, 1920	. 4		-1	
TXR, 1 Ton, 1919 3	16 503/4 1/4 113/4	4:	External - Internal	Stanley 606-7		16 32	4	Rear Wheel
TWL, 1 Ton, 1919 31/4 A, 11/2 Ton, 1919 31/4	1/4 113/4		Internal	Stanley 710-12 Stanley 811-12-20	23/4	16 38 1/4 48	4	Rear Wheel
JWBL, 2 Ton, 1919 31/2	1/4 1316		Internal	Stanley 720-21	. 2	16 41	4	Rear Wheel
NL, 3½ Ton, 1919. 3¾	1/4 15% 1/4 17 18		Internal Internal	Stanley, 728	. 2 .	16 44 TOL	4	Int. & Ext.
NL, 5 Ton, 1919 4 A, 1½ Ton, 1919-20 3¼	1/4 17 18 13 11 18		External	828 730	. 2%	14 501/4 18 371/2	4 2	Int. & Ext. Internal
A, 1½ Ton, 1919-20 3¼	1118	2	Internal	730	. 2	1/4 39	2	External
A, 2½ Ton, 1919-20 3½	13%		External	735	2	3 37½	2	Internal
A, 2½ Ton, 1919-20 3½ A, 3½ Ton, 1919-20 3¾	13% 15 15¾	2 2	Internal Int. & Ext.	735	. 2	1/4 39	2	External
A, 5 Ton, 1919-20 4	18	2	External	Stearns-Knight L 4	1,	.,		m
A, 5 Ton, 1919-20 4	½ 18	2	Internal	1915-16-17		1/4 13	2	Transmission
Samiles Truck 190				Stearns-Knight L 4		1/4 20	4	Rear Wheel
Service Truck 120, 1916-17 3 <sup>1</sup> / <sub>4</sub>	1/4 12	4	External	Stearns-Knight S K8	3,			
Service Truck 120,	4		ALL THE	1916-17		1/4 13	2	Transmission
Sheldon Axle, 1916-	1/ 101/	4	Internal	Stearns-Knight S K8		1/4 24	4	Rear Whee!
17	1/4 181/4	4	Internal	Stearns-Knight		"	- in	
1916-17 31/4	1/4 12	4	External	Truck, 5 Ton	. 2	1/4 201/4	4	Emergency
Service Truck 170-175,	1/ 101/		Determed.	Stearns-Knight Truck, 5 Ton	23/.	3/s 26	4	Service
1916-17	1/4 131/2	2	External	SKL4, 1919-20		1/4 20		Internal
1916-17 4	1/4 181/2	4	External	SKL4, 1919-20		ra 47		External
Service Truck 200,				Steele Truck A-B	3, .			
Sheldon Axle, 1916-	1/4 34	4	Internal .	BA	. 31/2	1/4 421/2	2	External
17 3 Service Truck 220,	74 01	1	Internal	Steele Truck C	. 31/2	1/4 361/4	2	External
1917-18 31/4	1/4 12	4	Duplex	Stegeman Truck,				
Service Truck 230-240, 1917-18 3½	1/ 191/	4	Duplex	1916-17	. 3	1/4 21	4	Rear Wheel
Service Truck 270-275,	1/4 131/2	4	Duplex	Stegeman Truck, 1916-17	. 21/2	1/4 131/2	2	Service
1917-18 33/4	1/4 16	4	Duplex	Stegeman Truck,	2			
Service Truck 300,	1/ 101/	town	Duplex	and 3 Ton, '18		1/4 171/2	4	Rear Wheel
1917-18 4 220, 1 Ton, 1919 31/4	1/4 18½ 1/4 24	4	Internal	Stegeman Truck, and 3 Ton, '18	. 21/2	1/4 131/2	2	Service
31-36, 1½ Ton, 1919 3½	1/4 27		Internal	Stegeman Truck,	4			
51, 2½ Ton, 1919 3½	1/4 27		Internal	and 5 Ton, '18		1/4 21	4	Rear Wheel
71-76, 3½ Ton, 1919 3¾	1/4 32 1/4 37		Internal Internal	Stegeman Truck, and 5 Ton, '18		1/4 131/2	2	Service
101, 5 Ton, 1919 4 220, 1 Ton, 1919-20. 3 <sup>1</sup> / <sub>4</sub>	1/4 12	2	Int. & Ext.					III THE PARTY OF T
31, 1½ Ton, 1919-20 3¼	1/4 12	2	Int. & Ext.	Stephens Six, 1918		32 40% 1/8 43	2 2	Internal External
36, 1½ Ton, 1919-20 3¼	1/4 12 1/4 13 <sup>1</sup> / <sub>2</sub>	2 2	Int. & Ext. Int. & Ext.	Stephens Six, 1913 80, 1919				Internal
51, 2½ Ton, 1919-20 3½ 71, 3½ Ton, 1919-20 3¾	1/4 16	2	Int. & Ext.	80, 1919	. 2	32 42 %		External
76, 3½ Ton, 1919-20 3¾	1/4 16	2	Int. & Ext.	Series 80, 1920	. 2	3 42 5 241/		External
101, 5 Ton, 1919-20. 4	1/4 181/2	2	Int. & Ext.	Series 80, 1920	. 2	32 341/2		Internal
2:1 20 93/	3 16	4	Internal	Sterling Truck, 3/2	4			
Simplex 38	16 16 201/2		External	Ton	. 11/4	1/4 391/2	4	Rear Wheel
Simplex 50 3	3 14	4	Service	Sterling Truck, 2½ Ton, 1917-18	21/.	is 51½	2	Rear Wheel
Simplex 50 23/8	16 16 193/	4	Internal External	Sterling Truck, 31/2		10 01/2	BULL	
Simplex 5 21/2	ra 13% 13% 44	2	Rear Axle	Ton, 1917-18		rt 64	4	Rear Wheel
Simplex 5	1/4 32	ĩ	Jackshaft	Sterling Truck, 5	31/.	ra 6134	1	Jackshaft
analet la la	- 37			Ton, 1917-18 Sterling Truck, 7	. 0/2	16 01/4	-	Jucasume
Standard— 56 1 Top 1919 3	1/4 1033	8		Ton, 1917-18		1/4 72	4	Rear Wheel
56, 1 Ton, 1919 3 76, 2 Ton, 1919 3½	1/4 10 14 1/4 13 13	8		2½ Ton, 1919	. 21/4	10 511/2		External
66, 3½ Ton, 1919 3¾	1/4 15%	8		3½ Ton, 1919 5 Ton, 1919		16 64 72 72		External External
86, 5 Ton, 1919 4	1/4 1718		Emergency	7 Ton, 1919		1 61%		External
8 F and G, 1917-18 2 8 F and G, 1917-18 2	130 411/2 130 45	2	Service	7 Ton, 1919	. 4	1/4 13		External
E, 1917				1920 1½ Ton, 1920		½ 54 ½ 11%	4	Int. & Ext.
F, 1917			Exp.	2 Ton, 1920		14 131/4	4	Internal
2 Ton, 1917 3	5 13½	. 0	J. P.					

		of Bra		CON	IMERCIAL C	AR BRAKE LINING DA		of Bra		2.4	
		Lining		No.				ining		No.	
Car Model Year	Wdth.	Thick-	Lgth.	of	Type of	Car Model Year	Width.		Lgth.	of	Type of
		ness		Pcs.	Brake	2		ness		Pes.	Brake
Sterling Truck			102			Studebaker Truck-	.)	5	195		Park and
2 Ton, 1920		1/4	13%	4	External	EJ6, 1920	10	3/2	43%		External
2½ Ton, 1920		14	131/8	1	Internal	EJ6, 1920	174	3,5	39%		Internal
2½ Ton, 1920		14	13%	1	External	Stutz, All Models,					
3½ Ton, 1920		1/4	151/2	1	Int. & Ext.	1914-15-16-17-18		32	17	8	Internal
5 Ton, Worm, 1920 5 Ton, Chain, 1920.		1/4	561/4	2	Int. & Ext. External	G, 1919		32	161/2		Internal
5 Ton, Chain, 1920.		1/4	30	î	Internal	G, 1919	194	32	161/2		External
71/2 Ton, 1920		1/4	561	2	External	Sullivan Truck G,					
7½ Ton, 1920		1/4	30	ī	Internal	1915-16	9	13c	31	9	Lackshatt
						Sullivan Truck G,	-	16	01	2	Jackshaft
Sternberg Truck	4	16	361/4	4	Rear Wheel	1915-16	21/0	re	16	4	Rear Wheel
Stewart Truck 6, 3/4						Sullivan Truck E,	2/2	16	10		Real Wheel
Ton, 1917-18	2	10	41%	2	Ext. Foot	1916-17	31/4	re	12	2	Rear Wheel
Stewart Truck, 7, 2		-				Sullivan Truck E,		16	12	~	recai wheel
Ton, 1917-18		16	50%	2	Ext. Foot	1918		1/4	13	8	Rear Wheel
Stewart Truck, 8, 1						Sullivan Truck F,		/9		O.	Accas White
Ton. 1917-18	2	32	413/8	2	Ext. Foot	1917	31/4	re	12	8	Rear Wheel
Stewart Truck, 9, 11/2						Sullivan Truck F	0,4	10			recta White
Ton, 1917-18		16	481/4	2	Ext. Foot	Sullivan Truck F,	31/2	1/4	13	8	Rear Wheel
11, ¾ Ton, 1919		32	223/4		Internal	F, 11/2 Ton, 1917-20	31/2	1/4	13	8	Int. & Ext.
11X, % Ton, 1919.	2	3	4 4 10		External	E, 2 Ton, 1916-20		1/4	13	8	Int. & Ext.
8, 1 Ton, 1919	2	32	223/4		Internal	., , 1010 2011	014				
8, 1 Ton, 1919		16	41%		External	Templar 445, 1918	2	16	15	2	Int. Service
9, 1½ Ton, 1919		3	8		Internal	Templar 445, 1918	1	16	15	2	Ext. Emer.
9, 1½ Ton, 1919	2	3	481/4		External	1417 1010	0	74	10		C .
7, 2 Ton, 1919		16	8		Internal	A445, 1919		16	18		Service
7, 2 Ton, 1919		3	50%		External	A445, 1919		100	18		Emergency
10, 31/2 Ton, 1919	5	16	8		Internal	1920		10	171/2		External
10, 31/2 Ton, 1919	3	16	60		External	1920	1	16	171/2		Internal
M7, 2 Ton, 1918-20		3	50%	2	External	Traffic Truck-					
M7, 2 Ton, 1918-20		16	8	2	Internal	C, 4000 lbs	1%	10	391/2		Internal
M12, 1 Ton, 1920	2	3	41%	2	External	C, 4000 lbs		3	421/2		External
M12, 1 Ton, 1920	2	1/2	223/4	1	Internal	C 4000 lbs., 1919-20		in	431/2	2	External
M9, 11/2 Ton, 1919						C 4000 lbs., 1919-20		13.	38	2	Internal
20	2	in	481/2	2	External	2 1000 1000, 1010 20				~	Titerina
M9, 11/2 Ton, 1919						U. S. Truck (Chain)					
20	5	16	S	2	Internal	E, 1915-16-17-18	3	16	40	2	Internal
M10, 31/2 Ton, 1918-						U. S. Truck (Chain)	-				
20	3	16	60	2	External	E, 1915-16-17-18	2	1/4	28	2	External
M10, 3½ Ton, 1918-						U. S. Truck (Chain)					
20	5	16	S	2	Internal	D, 1914-15-16-17	31/2	1/4	46	2	Internal
M11, % Ton, 1919-		-				U. S. Truck (Chain)					
20	2	10	41%	2	External	D, 1914-15-13-17	2	1/4	32	2	External
M11, ¾ Ton, 1919-			000			U. S. Truck (Worm)	121				
20	2	32	223/4	1	Internal	Н, 1917-18		1/4	46	4	Internal
M7X, 1920		16	50%	2	External	U. S. Truck (Worm)					
M7X, 1920		16	S	2	Interna!	J, 1917-18	21/2	1/4	50	4	Internal
M10X, 1920		rie .	60	2	External	U. S. Truck (Worm)					
M10X, 1920	5	Ye.	8	2	Internal	K, 1917-18	3	1/4	62	4	Internal
Studebaker ED, SF						U. S. Truck (Chain)					
7, 1916		re re	421/4	2	Internal	D, 1918-19	31/2	1/4	20	4	Internal
Studebaker ED, SF						U. S. Truck (Chain)					
7, 1916		re	44 %	2	External	D, 1918-19	2	1/4	32	2	External
Studebaker 25, '17	13/4	re	38	2	Internal	Universal Tours					
Studebaker 25, '17	2	re-	38	2	External	Universal Truck					
Studebaker Touring					2000	Velie 12, 1915	21/2	136	40	2	Internal
SH, 1918		32	39%	2	Internal	Velie 12, 1915	21/2	35 Y6	40	2	External
Studebaker Touring						Velie 14, 1915		36	40	2	Internal
SH, 1918	2	32	43%	2	External	Velie 14, 1915		36	44	2	External
Studebaker EG, EH,						Velie 15, 1916	2	13 16	401/4	2	Internal
1918		32	431/4	2	Internal	Velie 15, 1916	2	18	433/4	2	External
Studebaker EG, EH,						Velie 22, 1916	-	1.0			
1918	2	32	463/4	2	External	Velie 23, 1917	31/.	1/4	113/4	8	Internal
Studebaker Truck 7,					PARTY SINGS	Velie 24, 1917	21/4	3 16	40	2	Internal
1918		3/2	431/4	2	Internal	Velie 24, 1917	21/4	3 16	44	2	External
Studebaker Truck 7,					A PROPERTY OF	Velie 25, 1916, 25A	- /2	16	11	2	Lyxternat
1918		12	46%	2	External	1917	31/4	1/4	113/4	8	Internal
EH, EG, 1919		1 0	431/4		Internal	Velie 26, 1916, 26A	074	/9	11/4	0	Internal
EH, EG, 1919		30	46%		External	1917	31/2	1/.	11 %	8	Internal
SH, 1919	. 13/4	32	39%		Internal	Velie 27, 1917	2	1/4 13c	401/4	8	
SH, 1919	. 2	1/2	43%		External	Velie 27, 1917	2	0	433/4	2	Internal
ЕН6, 1920	2	182	463/4		External	Velie 28, 1917	13/	16 16		2	External
ЕН6, 1920	13/4	202	431/4		Internal	Velie 28, 1917	115	16 3 16	351/4 371/8	2 2	Internal
EG6, 1920		32	463/4		External	Velie Truck Z, 2 Ton	116	16	0718	- 2	External
EG6. 1920		de	431/4		Internal	3 Ton, 1913	,				

# No. 26—IUSAC THE CAMPBELL IRON CO., SUPPLIES, 809-19 CASS AVE., ST. LOUIS. PLEASURE AND COMMERCIAL CAR BRAKE LINING DATA—(Continued) —Size of Brake— Lining No. 26—IUSAC THE CAMPBELL IRON CO., SUPPLIES, 809-19 CASS AVE., ST. LOUIS.

	AQ.	Size of B		73 91					-Size	of Bral	ce-		
		Linin		No.				**	W. J. L	Lining		No.	
Car Model Year	r W	dth. Thic			Type of	Car	Model	Year	wath.		Lgth.	of	Type of
		ness	,	Pcs.	Brake	***				ness		Pcs.	Brake
Velie-		11/	10		Y1 '1	Westc			0				
25, 1916-17			12	4	Each		1919 .			Yes 3	41		Internal
25, 1916-17		31/2 1/4	13 76	4	Duplex		1919 .		- 4 -	Ye 3	44		External
46, 1½ Ton, 191	9	21/4 32	521/s		Internal		1919 .			16	421/2		Internal
46, 1½ Ton, 191			5416		External		1919 .			The state of	401/2		External
48, 1919			351/4		Internal		1920 .			The state of	441/2		External
48, 1919			1918		External		1920 .			16	40		Internal
39, 1919			401/2		Internal		1920 .			76	401/2 421/2		Internal
39, 1919			403/4		External	C30,	1920 .		172	1.6.	42/2		External
48, 1920			193/4		Internal	White	CAC	CAH					
48, 1920		11/2 16	421/2	2	External	1015	GA, G	G, An	91/.	रें	17		Rear Whee
46-11/2, 1919-20 .			5416	2	External	1910	CF C	CED	472	16	17	4	Rear whee
46-11/2, 1919-20 .		21/4 3/2	52½	2	Internal	White	GE, G	G, ED,	91/	3.	111/	4.	Door Whee
Vim Truck 21,	1/2					1910	OF C	C ED	27/2	1g	441/2	4	Rear Whee
Ton, 1917-18		13/4 18	36	2	Internal	White	GF, G	G, FD,	01/	.3.	==1/		Dear Wheel
Vim Truck 21,										1's	551/4	4	Rear Wheel
Ton, 1917-18		13/4 16	36	2	External		Truck						
Vim Truck 22,							2 and 3						
Ton, 1917-18		2 1/4	43	2	Internal		Truck						
Vim Truck 22,						C, 4	5, 5 Tor	1					
Ton, 1917-18		2 1/4	43	2 .	External	Willes	-Knight						
Vim Truck 23,						88.8	1917		91/	12.	13	4	Internal
Ton, 1917-13		21/4 1/4	51	2	Internal '		1917			3	441	2	External
Vim Truck 23,							1916			10	441/2	2	External
Ton, 1917-18		21/4 1/4	51	2	External		1916			16	13	1	Internal
							1917			16	13	4	Internal
Ward El. Truck		21/4 16	33.55		Internal		1917			3	441/2	2	External
					External		1917			131	10%	4	Internal
					Internal		1917			76	41	2	External
Ward El. Truck		21/2 1/4			External		1919			3	52		Internal
Ward El. Truck		31/2 1/4		100	External		1919			3	18		External
West aut + 020 025 1	015	13/. 3.	41	2	Internal	301,	1010			111	10	*/*	Laternai
Westcott 030-035, 1			421/2	2	External	Winto	n Six 21	A '15	21/0	ric .	40	2	Internal
Westcott 030-035, 1			41	2	Internal		n Six 21			3	44	2	External
Westcott U-50, '15			44	2	External	Winto	n Six 21	17.	21/2	76	421/2	2	Internal
Westcott U-50, '15		16	44	-	Lyxternar	Winto	n Six 21	, 15	3	12	441/4	2	External
Westcott 41-42-51,		3.	41	9	Internal	Winto	n Six 22	16.17	21/	ric .	44%	2	Internal
1916		2 16	41	2	Internal		n Six 22			13	483/4	2	External
Westcott 41-42-51,		3	44	2	External		n Six 22			16	10/4	-	Laccinai
1916			44		External					130	443/4	2	Internal
Westcott S-1917			41	2	Internal	Winto	n Six 22	A 1016	272	16	11/4	-	riiternai
Westcott S-17, '17.		2 16	44	2	External					y3n	48%	2	External
Westcott S-18A, 13			41	0	Internal	21 0	nd 25, 1	010	91/		493/4		Internal
S-19, 1919		2 re	41	2	Internal	24 a	nd 25, 1	010	21/2	116	5234		
Westcott S-18A, 19					Potenti	24 3	nd 20. 1	1010	21/2	16.	4434		External
S-19, 1919		2 कि	41	2	External	22 a	nd 22A,	1010	21/2	16 16	48%		Internal Internal
S19, 1919			41	2	Internal	22 a	nd 22A,	1918	21/2		531/2		External
S18A, 1918			41	2	External					rh rh	49		Internal
S19, 1919		2 18	41	2	External	1920			272	141	10		Internal

#### G.P. MUFFLER CUT-OUTS.

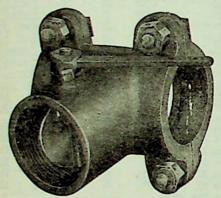


The valve-tongue and its seat are so constructed that when the Cut-Out is open, the line to the muffler is completely shut off and the correct angle is obtained for deflecting the exhaust gases freely and without a possibility of back pressure. The G.-P. Muffler Cut-Out is made in two parts, thus enabling quick and thorough access to its interior.

#### For Exhaust Pipes of the following outside diameters:

11/2, 15/8, 13/4, 13/8-inch. Price, each	\$4.50
25%-inch. Price, each	
Ford Outfit, size 11/2-inch. Price, each3492	4.50

#### CUT-OUT VALVES.



Style C.

The Style C Cut-Out is attached by cutting a V-shaped slot in the exhaust pipe and clamping Cut Out to it, connecting valve to pedal on foot board.

Sizes, 11/4	to 21/2 inches.	Price, each	\$1.00
		rice, each	

#### TABER COMBINED MUFFLERS AND CUT-OUTS.



Outfits consist of muffler and cut-out combination and handy operating device, with full directions for installation:

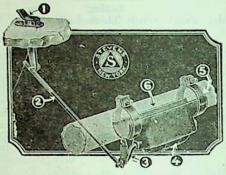
Buick, Price, each	
Dodge. Price, each	6.50
Maxwell. Price, each4206	6.50

#### CUT-OUT CABLE.

In lots of 6......304 each less.



#### SNAP CUT-OUTS FOR FORD CARS.



#### TABER MUFFLERS.



Solo Model-Without Cut-Out.

Constructed of high grade gray iron throughout, making blowouts (due to muffler explosions) impossible. Very easily installed, and cannot rattle. For Chevrolet, Dodge, Maxwell cars.

Price,	each .			 									.2906	\$3.85
Price,	in lots	of	6.	 									.2701	3.85

#### FOOT PEDALS.







Style M.

 Style M. Price, each
 184
 \$0.35

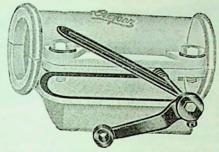
 Style Y. Price, each
 227
 .50

#### CUT-OUT PULLEYS.



Pulley	made of Malle	eable iron, all Japanned.	
Price, Spring	each for Cut Out.	Price, each	\$0.15

#### COOPER SPECIAL CUTOUTS.



An especially designed gray iron valve with adjustable lever, of sturdy construction throughout. Releases back pressure on motor, causes loud explosion and simplifies locating weak cylinder, missing spark plug, knock in motor, etc. Heavy steel flapper opens a 3-inch exhaust area and closes tight against an accurately machined seat. Easily installed without cutting the exhaust pipe in two. Made in all sizes.

	With Pedal	With Pedal	With Control
Sizes	No. 3	No. 4 or 5	No. 6
11/2-inch Ford Siz	e \$3.00	\$3.50	\$5.00
15/8, 13/4, 17/8	3.50	4.00	5.50
2, 21/8	4.00	4.50	6.00
21/4, 23/8, 21/2, 25	4.50	5.00	6.50
23/4, 27/8, 3	5.50	6.00	7.50
n			

Packed in individual cartons-ten to the standard shipping package.

251 P. C. Doz. Lots, 304 P. C.

#### COOPER SCREW TYPE CUTOUTS FOR BUICK.



Malleable iron valve with high tension spring and adjustable lever, made especially for Buick car. Installed by replacing the standard cleanout plug just ahead of the muffler with this valve. Bell-shaped, it forms a megaphone and causes loud explosion.

With Pedal	With Pedal	With Lever	With Control
No. 3	No.4	No. 5	No. 6
\$3.50	\$4.00	\$4.00	\$5.50

Packed in individual cartons-ten to the standard shipping package.

251 P. C. Doz. Lots, 304 P. C.

# COOPER CUTOUT PEDALS.



# Pedal No. 2.

A neatly finished black enamel malleable pedal, with an exceptionally long throw. Has few working parts and operates simply and easily. Positive lock catches automatically and releases instantly. Each .....\$0.50



#### Pedal No. 3.

A very serviceable black enamel malleable pedal of the spring acting type. Spring is of heavy crucible spring coil, securely fastened to upper and lower braces. Positive lock holds cutout open.

Each .....\$0.50

254 P. C. Doz. Lots, 307 P. C.



# Lever No. 5.

No. 5 Lever (or Sprag) is a very attractive and convenient control for the operation of cutouts, exhaust horns, exhaust heater valves, etc. Attached quickly to the front of seat, dash, side of car, or other convenient location. Made of malleable iron and neatly finished in black enamel. Each .....\$1.25

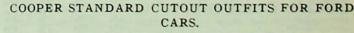


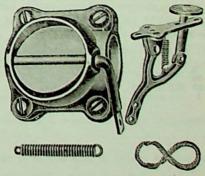
Pedal No. 4.

A positive and easily operated locking device. Installation is made with a single five-eighth inch hole in the floor board and drawing up the nuts, one on each side of the board.

Each ..

253 P. C. Doz. Lots, 306 P. C.





An accurately machined, well-finished Cutout Outfit for Ford cars, at a low price. Has improved one-piece lever and 2-inch exhaust opening. No pulley needed to attach. 

Packed in individual cartons-thirty to the standard shipping package.



# COOPER DASH CONTROLS No. 6

Made of solid brass and steel, finished in the finest manner possible, with exposed parts brightly nickeled. Highly or-namental, handy and serviceable. For the operation of muffler cutouts, exhaust heater valves, air choke, radiator shutters and cowl ventilators. Locked in any position by a slight twist to the right. stalled with a single 1/2-inch hole in the dash.

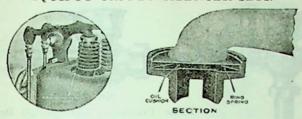
Packed in individual cartons.

# CUT-OUTS

The following list gives authorative information as to the size of exhaust pipes on automobiles of every make. This list has been compiled from authoritic sources, and can be taken as a reliable guide in purchasing the Cooper "Special" Muffler Cutout, which is made for all cars.

	1919	1920	1921	1922	1919 1920 1921	1922
NAME OF CARS	in.	in.	in.	in.	NAME OF CARS in. in. in. 2½ Leach 20 A	in. 21/4
Ace. G. & G. Allen 42	154	134	214	2	Lexington S & T 2 2 2	2
Ambassador	217	21/4	214	214	Liberty 10 ABC	21/2
American D Anderson S—30-40	216	214	214	214	Locomobile 48 2% 2% 2%	2%
Apperson 8-21-22	154	134	134	194	Lorraine 21 T	2 2
Auburn 6—39-51 Beggs		214	21/4	214	Maibohm B 2	2
B. E. L			11/2	134	Marmon 34	3
BellBiddle B 1 & 5	91.	21/4	214	214	Maxwell 25	3
Birch 30	154	134	134	134	Merit 21/4	21/4
Bour Davis 21—S.		1%	214	214	Metz M—6 2½	21/2 21/4
Bradley 4			21/4	21/4	Mitchell F 40—F 42 2¼ 2¼ 2¼	21/4
Brewster 91 Briscoe 4—34	13	13,	2%	234	Moller 4	21/4
Brooks S-21		1.74	11%	11/6	Monroe 134	1%
Buick All		1%	216	214	Moon 6—48, 6—68. 2½ 2½ 2½ Moore, 30 F. 15 134 134	21/4 11/4
Bush E-4			214	214	Nash 4 & 6 2 2 2 2	2
Cadillac 59 Double Exhaust	134	134	1%	134	National Sextet 2½ 2½ 2½ Nelson E 1½ 1½ 1½ 1½	21/2 11/2
Carroll C		21/	214	21/4	Norwalk 4 23%	2%
Chalmers	25%	2%	21950	2%	Oakland 34 C	21/2
Champion KO	2	2	21/2	21/2	Oldsmobile 43 A 134 134 2	2
Chevrolet 490	2	2	216	2	Oldsmobile 46 & 47 1% 1% 1%	1%
Cleve'and 6	2	2	2	2 9	Overland 4	2%
Climber 4			2	2	Owen Magnetic M—25         2½         2½           Owen Magnetic W-42         25%         25%	21/4
Climber 6	950	256	256	254	Packard 12 & 6	214
Columbia 6—20	2	2 78	21/4	21/4	Paige 6—42 2 2 2	214
Commonwealth 42		21/4	21/2	21/4	Paige 6-66	214
Crawford 6—40	21/4	214	214	21/4	Paragon 4 2½	21/2
Crow Elkhart 6 & 4	2	21/4	21/4	21/4	Parenti 8	214
Cunningham 8 Daniels 8		134	17%	13%	Peerless 56	1%
Davis 51-57	2	2	21/4	21/4	Pledmont 4—30 2½ 2½ 2¾ Piedmont 6—40 2½ 2½ 2¾ 2¼	214
Dorris 6—80 Dispatch 4	21/2	21/2	21/2	21/2	Pierce-Arrow 2% 2% 2%	2%
Dixle Flyer H—S—76.	23%	2%	23%	2%	Pilot 6—50 2½ 2½ 2½ 2½ Pilot 6—45 & 50 2½ 2½ 2½ 2½	214
Dort 12 A—17 A.	214	214	214	21/4	Porter 46 2½	21/2
Dupont A		222	21/2	21/2	Premier 6—D	2 2
Elear D4	21/4	214	21/4	21/4	Premocar 6—40A 2½ 2½ 2½	21/2
Elgin 6—K	2	2	2	2 4	ReVere DC 3 3	214
Essex A	2	2	2	2	Roamer 4—80	21/2
Fergus 6	114	11/2	11/2	11/2	Rolls-Royce 6 3	3 214
Franklin 9-B	11/2	11/2	11/2	116	R & V Knight R & J	272
Gardner 4			234	21/4	Sayers 6 DP 21/4	214
Geronimo 6			21/4	21/4	Scripps Booth 2½ 2½ 2½ Seneca L 1½ 1½	11/2
Globe 4B—10 Grant 6 HX.	134	134	21/4	21/4	Sheridan 4 2	2
Hal'aday 6			21/4	21/4	Singer 20 2½ 2½ 2½ 3½ Skelton 4 2¼	21/4
Hamlin Holmes 4		2	21/4	21/4	Southern 6—60	2%
Harroun AA	134	134	1%	1%	Standard 8—K     15%     15%     15%       Stearns Knight SKL 4     2½     2½     2½	1% 2¼
Harvard 4			11/4	11/4	Stephens 80 2¼ 2¼ 2¼	21/4
Haynes 47-50-18-55	2%	23%	23%	238	Sterling A B	21/2
H. C. S. 4		2	21/4	21/4	Stewart 4 & 6	214
Hudson O	21/4	21/4	21/4	21/4	Studebaker EJ Light 6 2 2 12	134
Huffman 6		1%	134	21/4 13/4	Studebaker EH 2 2 2	2
Hupmobile Jones 6—28	21/2	21/2	21/2 21/4	21/2	Stutz K 3 3 3	3 2
Jordan F & M	21/4		21/4	21/4	Texan A R_38	21/2
Kelsey 6 Kenworth 6-55			21/4	21/4	Tu'sa 4	214
Kenworth 4-80 & 8-90			3	3	Velie 48 2¼ 2¼ 2 ½ 2 ½ 2 ½ 2 ½ 2 ½ 2 ½ 2 ½ 2 ½ 2	2
King 8	216	216	21/4	21/4 21/4 22/4	Washington 6 2 2 2 2 2 3 2 3 2 3 2 3 2 3 2 3 2 3	21/
Kissel 6	2%	234	234	2%	Wescott C 48 & 38. 2½ 2½ 2½ 2½ Willys Knight 20. 2½ 2½ 2½ 17%	214
Kline 6-55 K		21/4	21/4	21/4	Wills St. Claire 8.	134
Jackson 6-38 RT-4-21			21/4	21/4	Winther 6-61	214
La Fayette 8				134	Winton 25	3

#### EQUIPTO TAPPET SILENCER SETS.



A simple instrument which eliminates the clatter and the wear incident to the everlasting hammering between valve stem and rocker arm.

Fills the gap between the top of the valve stem and the hammerhead of the rocker-arm; keeps these parts continuously connected so that all parts are always held in contact along the entire line of valve motion.

Can be installed by anyone.

How It Works-The Equipto "Ring-Spring" Tappet Silencer is adjusted on the head of the valve stem so that the hammerhead of the rocker-arm compresses the ringspring of the Tappet Silencer between the two discs. The ring-spring maintains a continuous tension of about ten pounds on the valve operating parts, takes up all lost motion in these parts; prevents clatter and makes wear impossible, except that due to reciprocation.

Oil placed on the silencer works in between the discs and acts as an additional cushioning agent to prevent clatter and wear at the Tappet.

How to Order-Equipto Tappet Silencers are stocked in five different packages, each package containing the proper number of silencers of the proper type and clearly marked for cars as listed below: Order by type designation and number of cylinders.

Type C516 (6-cylinder Set)-To fit: BUICK-1916 Light Sixes, 1917 Light Sixes. CLEVELAND-1921 Models. GRANT-All Models.

Type C-516 (4-cylinder Set)-To fit:

CHEVROLET-All 4-cylinder Cars.

BUICK-1914, B-24; 1914, B-25; 1915, C-24; 1915, C-25;

1917 Fours: 1918 Fours.

SCRIPPS-BOOTH-All Fours.

OLDSMOBILE-1921 Fours

Type B-38 (6-cylinder Set)-To fit:

BUICK-B-54, B-55, 1918 Sixes, 1919 Cars, 1920 Cars, 1921 Cars.

NATIONAL SEXTET-1920 Cars, 1921 Cars.

Type B-38 (4-cylinder Set)-To fit:

BUICK-1914 B-36, 1914 B-37, 1915 B-36, 1915 B-37.

Type O-516 (6-cylinder Set)-To fit:

OAKLAND AND OLDSMOBILE 6-cylinder Cars.

ELGIN-All Models.

TEMPLAR-All Models.

SCRIPPS-BOOTH-6-cylinder Cars.

VELIE-Light Sixes, All 1920 Cars, All 1921 Cars

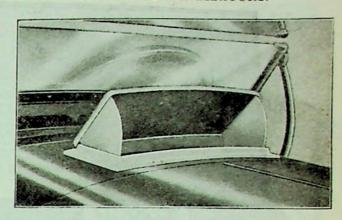
MAIBOHM-All models.

Special gauge is furnished with each box to insure absolutely correct adjustment, making it easy to install the set

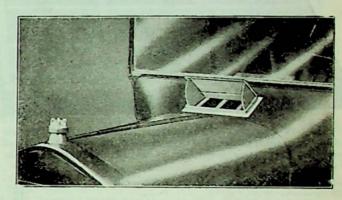
#### List Prices.

Set of 12 Equipto Silencers, ready to install on 6-cylinder cars\$	3.00
Set of 8 Equipto Silencers, ready to install on 4-cylinder	
cars	2.0)

#### MECO COWL VENTILATORS.



No. 3 Ventilator Applied.



No. 1 Ventilator Applied.

It cools the hottest place on your car. Eliminates the necessity of raising lower windshield. Keeps the car clean. Conveniently operated from the dash by an adjustment button. In case of Ford Touring Cars and Roadsters a lever under the cowl is furnished. This adjustment may be had for other models also. Is easily applied by simply cutting an oblong hole in the cowl. No screw holes are required, as the screws are concealed and their appearance eliminated. Furnished in Natural Mat. or Polished Aluminum or Black Japan. Unless otherwise specified, the Mat finish will be furnished.

Nos. 1 and 2 are designed particularly as Ford and Dodge models and have an opening 31/4" wide by 10" long. All other Nos. with the exception of ventilators for the sides of the car have an opening 4" wide by 12" long. In ordering, specify make of car, model, year and finish, and whether vou desire lever adjustment or dash adjustment.

Ventilator Nos. 00, 1 and 2, Lever Adjustment. Each. \$5.00 Ventilator Nos. 00, 1 and 2, Dash Adjustment.

Ventilator Nos. 0, 3, 4, 5 and 6, Lever Adjustment

Ventilator Nos. 0, 3, 4, 5 and 6, Dash Adjustment.

Note-No. 00 is a straight ventilator particularly designed for the side of the cowl. It has a 31/4" wide by 10" high opening, adding wonderful appearance to the car.

253 P. C. 6 or more, 307 P. C.

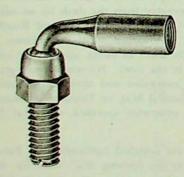
#### MORGAN BALL JOINT ASSORTMENTS.



This box contains 110 assorted Standard, Straight and Adjustable Joints with 100 Assorted Nuts. There is a Ball Joint in this assortment to fit every popular American made car.

90 Standard Ball Joints.	Price	0.12
10 Straight Ball Taires	D-ian	.12
10 Adjustable Ball Joints.	Price	
100 Assorted Nuts.	Price	.011/2
Price, per box	8002	\$16.00

#### BALL JOINTS.



One of the most useful fittings on a motor.

For making connections between steering wheel and throttle, and timer or magneto levers.

Dimensions given are first for tapped end, and second for threaded or screw end.

	Tapped End.	Screw End.		
No. 1	10-32	16-18	Each\$	0.12
No. 2	1/4-20	re-18	Each	.12
No. 3	1/4-24	1/4-27	Each	.12
No. 4	1/4-27	1/4-27	Each	.12
No. 5	$\frac{1}{4}$ - 28	1/4-28	Each	.12
No. 6	1/4-20	3/8-16	Each	.13
No. 7	1/4-20	1/4-20	Each	.12
No. 8	$\frac{3}{16}$ — 32	rs-32	Each	.12
No. 9	g-2-32	$3^{7}2 - 32$	Each	.12
No. 12	6-32	10-32	Each	.12
No. 13	32-32	32 - 32	Each	.15
	157	P. C.		

#### COMBINED PRIMING CUPS AND RELIEF COCKS.





No. 7-8.

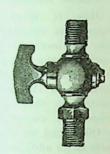
These Priming Cups are all Brass, and are perfectly tight, and will remain so, as spring at bottom of key will take up any wear.

No.	1.	Straight Priming, 1/8 thread281	\$0.40
No.	5.	Straight Priming, 1/8 thread, short shank 261	.32
No.	6.	Straight Priming, 1/4 thread, short shank 291	.36
No.	7.	Angle Priming, 1/8 thread302	.36
No.	8.	Angle Priming, 1/4 thread322	.40

#### AIR COCKS.







No.6-7.

No. 40-41.

No. 18-19.

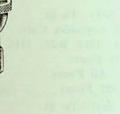
Fach

These are strictly high grade, all brass.

			Laci
6.	1/s-inch pipe	thread253	\$0.35
7.	1/4-inch pipe	thread301	.45
40.	1/8-inch pipe	male and female thread 456	.60
41.	1/4-inch pipe,	male and female thread 502	.75
18.	1/s-inch pipe	thread389	.55
19.	1/4-inch pipe	thread453	.60
	7. 40. 41. 18.	7. ¼-inch pipe 40. ⅓-inch pipe 41. ¼-inch pipe, 18. ⅓-inch pipe	6. ½-inch pipe thread

#### DOLE NEEDLE SEAT PRIMING CUPS.





No. P105.

No. P100.

The needle seat is well known as the only valve seat that is not subject to leakage. By merely giving the cup a slight turn to the left the valve is opened or released and is instantly closed in the same manner. Polished brass trimmings.

No. P100. Short shank, 1/8-inch pipe thread. Price, each \$0.56
No. P110. Short shank, 1/4-inch pipe thread. Price, each .60
No. P105. Long shank, 1/8-inch pipe thread. Price, each .62
No. P115. Long shank, 1/4-inch pipe thread. Price, each .61



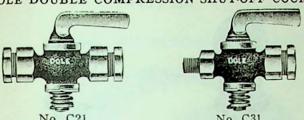


No. P120.

No. P130.

No.	P120.	Elbow, 1/	s-inch pi	ipe th	read. F	rice.	each	0.60
No.	125.	Elbow, 1/4	inch pir	pe th	read. F	rice.	each	.62
No.	P130.	45-degree	1/s-inch	pipe	thread.	Price	e, each.	.60
				P. C			-	

# DOLE DOUBLE COMPRESSION SHUT-OFF COCKS.



	No. C21.	No	o. C31.	
No. C22.	Two way, 1/4-inch O Two way, 1/6-inch O One end male, inch	D. D. tubing. n pipe threa	Price, each d one end	1.20 1.32
No. C32.	1/4-inch O. D. T.x <sup>1</sup> /s Price, each 1/4-inch O. D. T.x <sup>1</sup> /4-i			1.16
	Price, each			1.24
No. C34.	Price, each	inch pipe th	read.	
	Price, each			1.28



	One end female, iron pipe tap one end.
No. C41.	1/4 O. D. T.x1/s-inch pipe thread. Price, each.\$1.16
No. C42.	1/4 O. D. T.x1/4-inch pipe thread. Price, each. 1.24
No. C43.	
No. C44.	
	556 P. C.

#### DOLE COMPRESSION COUPLING ASSORTMENTS.

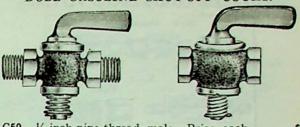


Finely finished wood cabinet, 7"x7"x21/2". This assortment has been put up in this convenient form to meet the demand for the modern fittings that are becoming standard equipment on many leading automobiles, trucks and tractors.

Thi	s ass	sortment	consists	01:
No.	A-3	Connec	tors	
	1/4"	ODT x 1	" IPT	at.

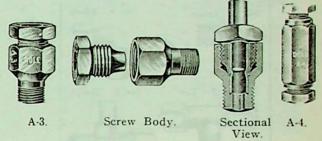
6 No. A-3 Connectors	
1/4" ODT x 1/4" IPT at\$20.00	\$1.20
6 No. A-3 Connectors	
16" ODT x 1/4" IPT at 26.00	1.56
6 No. A-7 Male Elbow	
1/4" ODT x 1/8" IPT at 24.00	1.44
6 No. A-7 Male Elbow	
6" ODTx1/s" IPT at 28.00	1.68
3 No. A-4 Union	
4" ODT Both Ends at 32.00	.96
3 No. A-4 Union	
6" ODT Both Ends at 40.00	1.20
6 No. D-10 Drain Cocks, Lever	
Handle, 1/8" IPT at 40.00	2.40
3 No. D-11 Drain Cocks, Lever	
Handle 1/4" IPT at 50.00	1.59
6 No. D-25 Drain Cocks, Tee	
Handle 1/8" IPT at 40.00	2.40
No. B105. Price, each	\$15.34
The character of the contract	

#### DOLE GASOLINE SHUT-OFF COCKS.



No. C50. ½-inch pipe thread, male. Price, each..... No. C60. ½-inch pipe thread, female. Price, each.... 553 P. C.

#### DOLE COMPRESSION COUPLINGS.



These couplings are indispensable wherever air, water, oils or gases are used, the double compression feature positively insures the joint against leakage."

No. A-3 connector tubing one end-pipe thread one end. 14-inch outside diameter of tube for 1/8-inch pipe thread. To-inch outside diameter of tube for 1/s-inch pipe thread. 

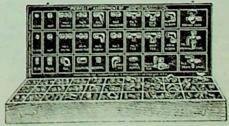
14-inch outside diameter of tube for 1/s-inch pipe thread. to-inch outside diameter of tube for 1/8-inch pipe thread.



A-6 elbow tubing one end-female pipe thread one end. ¼ O. D. of tube for ¼-inch pipe thread. Price, each...\$0.27 16 O. D. of tube for ¼-inch pipe thread. Price, each....32 A-7 elbow tubing one end—male pipe thread one end.
4-inch O. D. of tube for 1/4-inch pipe thread. Price, each .24
6-inch O. D. of tube for 1/4-inch pipe thread. Price, each .28 A-9 elbow tubing both ends.

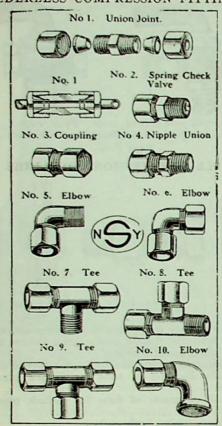
4-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/6-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread. Price, each 1/8-inch O. D. of tube for 1/8-inch pipe thread.

#### PERFECT ASSORTMENTS. Solderless Couplings, Fittings and Cups.



Assortment contains 155 pieces of compression couplings, cocks and brass fittings, such as are used on automobiles, motorboats, gas engines, etc. Cabinet is 201/s inches long, 21/2 inches high, 71/s inches wide and has 29 compartments. Made of wood, nicely finished, with hinges and locking de-

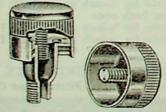
#### SOLDERLESS COMPRESSION FITTINGS.



For connecting copper tubing without necessity of soldering, flaring or threading. All pipe sizes are ½ except in the case of ½ tube sizes, where the pipe end is to fit ¼ I. P. thread.

Tube	siz	e	 		3."	1/4"	16"	3/8"
No.	1.	Each	 		\$0.20	\$0.20	\$0.28	\$0.32
No.	2.	Each	 		.24	.26	.32	.38
No.	3.	Each	 			.20	.20	.28
No.	4.	Each	 		.12	.14	.20	.24
No.	5.	Each	 			.20	.24	.30
No.	6.	Each	 			.20	.32	.34
No.	7.	Each	 			.28	.34	.44
No.	8.	Each	 			.28	.34	.41
No.	9.	Each	 			.32	.42	.66
No.	10.	Each	 			.20	.24	.28
			3	06 I	P. C.			

#### CENTER THREAD HIGH PRESSURE GREASE CUPS.



Will not rattle off, screws into standard thread, no danger of crossing or jamming thread, positive feed, greases bearing while in motion. Won't leak.

No. 000 00 0	Dimensions and Size of Carton 10 <sup>3</sup> / <sub>4</sub> x12 x 9 <sup>1</sup> / <sub>4</sub> " 11 <sup>3</sup> / <sub>4</sub> x13 <sup>3</sup> / <sub>4</sub> x 9 <sup>1</sup> / <sub>2</sub> " 15 <sup>1</sup> / <sub>2</sub> x 9 x13 <sup>3</sup> / <sub>4</sub> "	Cups p		Weight 69 lbs. 81 lbs. 83 lbs.
Inside Di Outside I Regular I	iameter, inches	% 85 1/s	00 18 116 1/6	0 11/4 11/12 1/4
Capacity	Grease, ounces	0.20	\$0.25 6 P. C.	11/4 \$0.40

#### OIL CUPS.





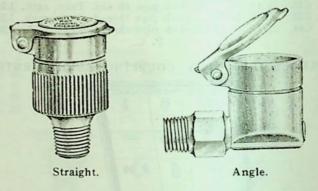
Style D. Fig. 52. Brass.

This Cup is easily opened from any position with spout of oil can. When can is withdrawn, the cap springs back into place.

			Per 100.
No. 1.	14-inch 32-V	thread 5901	\$ 7.00
No. 2.	re-inch 32-V	thread 7254	9.50
No. 3.	3/s-inch 24-V	thread 8002	10.70
No. 4.	13-inch 24-V	thread10009	12.50
No. 5.	1/2-inch 24-V	thread	16.00
No. 7.	1/4-inch Pipe	thread34002	30.00

In lots of 25-103 P. C. Less

# AUTOMATIC OIL CUPS.



Style "B" Oil Cups.

Most popular and satisfactory self-closing oil cup on the market. Majority of car makers have adopted this style of cup as full equipment on all models during past four years Very rigid and strongly constructed. Knurled wrench grip saving lost motion, also damage to car and cup when placing in position—pleasing in appearance, finish, and low priced

						Price Eac	h
No.	Dia.	Fitting			Packed	Straight An	gle
000.	5/8"	1/8" Pipe "	Thread	2	doz. in box	.251/2 .3	41/2
00.	3/4"	1/8" Pipe "	Thread	2	doz. in box	.281/2 .3	71/2
0.	7/8"	1/8" Pipe '	Thread	2	doz, in box	.311/2 .4	01/2
1.	1"	1/4" Pipe '	Thread	1	doz. in box	.39 .4	8
2.	11/4"	1/4" Pipe "	Thread	1	doz. in box	.48 .5	7

503 and 106 P. C. In 100 lots, 604 P. C.

#### OIL CUPS FOR FORD CARS.



This is exactly the same Cup that comes on the car, and we offer them to replace those lost. It is a good policy to carry a few in your tool box, as you should not leave the holes open to catch the dust, etc.

See No. 2517 on Ford Parts List.

## STONE INTERCHANGEABLE RIMS



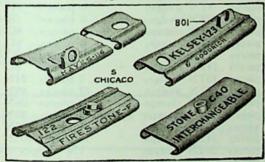
The Stone Interchangeable Rim replaces and interchanges with the following makes of rims:
Kelsey No. 30, Baker STZD, Dodge Spec,, Perlman, Stanweld, Baker, Jaxon.

Size												s	te	oc	k	1	V	0.											List
30x3 1/2														C	4(	١.	,												\$2.40
32x3 1/4														C	41	١,						٠	•					٠	3.50
32×4	•			1					-		-	*		C	4:	٠,			٠			*						•	3.80
							-		-	-	-		Ů	č	41	3.								•					4.10
34×436						i				0	0	i	ĺ,	Č	4	7	0												5.00

# FORD RIMS

AND OTHER LIGHT CARS

30x31/2 Demountable

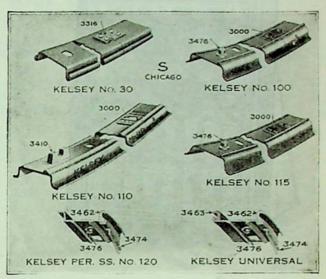


Rim No.	111 37	Rim Only	Wheel With Rim	Wheel Only
116	Haves .	\$2.40	\$7.00	\$4.75
117		4.00	9.00	5.00
*118	Baker .		7.00	4.50
†*119			7.00	4.50
*120	Kelsey .	3.25	7.00	4.75
	Kelsey .		7.00	4.50
	Firestone		8.75	4.50
	Kelsey 8		7.00	4.75
*124	Jaxon		7.00	4,50
*The	8I-C40 1	Rim replace	es these rims	broog

Interchangeable Rims, 303 P. C.

Ford Rims, 106 P. C.

# KELSEY RIMS



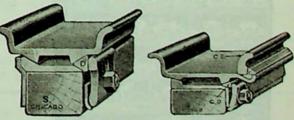
	***	-						
					TYF			
	*No	. 30	No.	100	P. S	. S.	Univ	ersal
Size	Stock	List S	tock	List	Stock	List	Stock	List
32x31/4	E41 \$	3.85	J41	\$3.85				
32x4								
34x4	E46	4.95	J46	4.95				
32x414	E43	5.95						
34x41/4								
36x41/4								8.90
•S. I. F	Rims ar	e inter	rchan	geable	e with	this t	уре.	
	ST	FFI	FFI	LOF	TYP	FC		
	No. 110							
Size S								
32x3 1/2 K	(41 \$3.8)	5						
32x4 K	42 5.00	K242	\$5.00					
32x41/2				Y43 3	\$5.50	X43 \$6.	00 F43	\$8.00
34x41/2								
New ty	ype sup	ersede	s No.	110 b	ut doe	s not	interch	ange.

#### BUICK 1921 AND 1922 RIMS



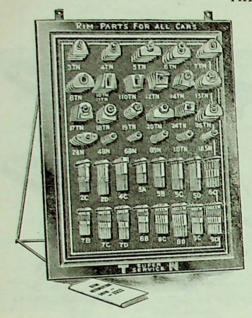
Buick 21	Rim		Buick 22 Rin	11
	TYPE	21	TYPE	22
Size	Stock	List	Stock	List
30x3 1/2 ss			Z 40	\$3.75
33x4	. Z44	\$4.65	Z144	4.40
34x41/2	. Z47	5.25	Z147	5.15

# FIRESTONE RIMS



Type E			Type C					
		PE E PLIT		TYPE C SOLID				
Size	Stock	List	Stock	List				
32x3 ½ 32x4 33x4 34x4 34x4 32x4 ½ 34x4 ½	M41 M42 M44 M46 M43 M47	\$4.29 4.71 4.91 5.09 5.66 6.12	L42 L44 L46 L43 L47	\$7.34 7.52 8.01 8.09 8.70				
		103 P. C.						

#### THE MASTER SALESMAN.



T-N SIGN.

#### Contents of Master Salesman:

6 piec	es	3TN	wedges	12	pieces	68N	nuts
6 piec	es	4TN	wedges	12	pieces	89N	nuts
6 piec	es	5TN	wedges	12	pieces	107N	nuts
6 piec	ces	6TN	wedges	12	pieces	165N	nuts
6 piec	es	7TN	wedges	6	pieces	2C	bolts
6 piec	es	STN	wedges	6	pieces	2D	bolts
6 piec	es	10TN	wedges	6	pieces	4C	bolts
6 piec	es	11TN	clamps	6	pieces	5A	bolts
6 piec	es	110TN	clamps	6	pieces	5B	bolts
12 piec		12TN	clamps	6	pieces	5C	bolts
6 piec		14TN	clamps	6	pieces		bolts
6 piec		15TN	wedges	6	pieces		bolts
6 piec		17TN	clamps	6	pieces	7B	bolts
6 piec		18TN	clamps	6	pieces	7C	bolts
6 piec		The second second	clamps	6	pieces		bolts
6 piec		20TN	wedges	6	pieces		bolts
12 piec		24TN	clamps		pieces		bolts
6 piec			clamps		pieces		bolts
6 piec		24N			pieces		bolts
12 piec		48N	nuts		pieces	-	bolts



T-N STEEL CABINETS.

Designed to attract the attention of the buyer and to get his business. Now in its second year and by far the greatest means ever devised to sell rim parts at retail.

All parts are on display in plain view of the customer. Forty sizes and types to remind the customer of his needs; will show him the exact part wanted in 99 cases out of 100.

Service to customer is instantaneous.

Made of 24-gauge steel with pressed frame and easel back. Can be used in show window, on counter, floor, or hung on the wall. Dressed by high-grade lithographers in a pleasing combination of four colors. The panel is buff color, striped in white and brilliant orange; frame is royal blue.

Contents: 282 pieces, 120 clamps and wedges—66 nuts— 96 bolts, consisting of a variety of forty sizes and types.

#### No Slow Sellers-That is Guaranteed.

Dealers' price for the steel sign and contents is less than the wholesale price of the parts without the sign. Contents sell at retail for \$37.56. Size 28 inches high, 22 inches wide. Shipping weight, 65 pounds.

And there are no better rim parts for the dealer trade than T-N parts, for they are made exclusively for repairs and replacements.

#### T-N Lithographed Steel Cabinet.

The cabinet is well built, made of 26 gauge steel with the corners of all shelves and the sides of the cabinet securely anchored. The sides and base are reinforced with wood concealed under the metal. This prevents bulging of the sides and of the base.

Lithographed in three colors, royal blue, brilliant orange and white.

In the T-N cabinet there is displayed a variety of forty sizes and types of rim parts. This wide variety is obtained without including any slow sellers or unsalable parts; we guarantee that.

#### Contents.

6	pieces	3TN	wedges	6 pieces 5C bolts
6	pieces	4TN	wedges	6 pieces 5D bolts
12	pieces	5TN	wedges	6 pieces 6C bolts
6	pieces	6TN	wedges	12 pieces 7B bolts
12	pieces		wedges	12 pieces 7C bolts
12	pieces	8TN	wedges	6 pieces 7D bolts
6	pieces	10TN	wedges	6 pieces 8B bolts
	pieces		clamps	6 pieces 8C bolts
12	pieces		clamps	6 pieces 8D bolts
	pieces		clamps	6 pieces 9C bolts
			clamps	6 pieces 9D bolts
12	pieces		wedges	6 pieces 24N nuts
	pieces		wedges	12 pieces 48N nuts
			clamps	12 pieces 68N nuts
12	pieces	19TN	clamps	12 pieces 89N nuts
12	pieces	20TN	wedges	24 pieces 107N nuts
12	pieces			12 pieces 105N nuts
6	pieces		wedges	174 wedges and clamps
6	pieces	2C	bolts	114 bolts
	pieces		bolts	78 nuts
6	pieces	4C	bolts	
12	pieces	5A	bolts	366 Total, 40 sizes and
6	pieces	5B	bolts	types.

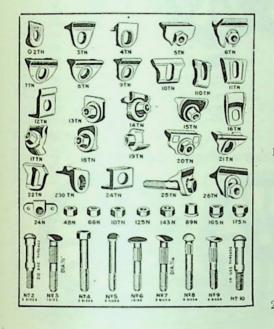
Dealers price for steel cabinet and contents is less than the wholesale price of parts without the cabinet.

Contents sell at retail for \$50.70. Shipping weight about 75 pounds; size 28 inches high, 20 inches wide, 6½ inches deep.

Use intensive merchandizing to increase the business of your store.

# Rim Wedges and Clamps

All T-N Clamps and Wedges, except forgings 02 and 110, are made of certified Malleable; sold for repair and replacement use with the following make of rims:



Part	Make of rim	Used with		Price
No.	used with	Bolt No.		Each
02TN	Firestone Steel Felloe	10	103	\$0.20
3TN	Baker		85	.15
4TN	Detroit	7	87	.15
5TN	Stanweld No. 21	7	101	.20
6TN	Stanweld No. 76	7	113	.20
7TN	Jaxon	7	86	.15
8TN	Jax., Buick, Perl. & Stzd	2-3-5-7	82	.15
9TN	Jaxon and Cleve	7	84	.15
10TN	Firestone	8	87	.15
110TN	Firestone	8	88	.15
11TN	Firestone	8	86	.15
12TN	Kelsey No. 110 & 210	5	82	.15
13TN	Kelsey PSS, & Universal	6	167	.25
14TN	Kelsey No. 100.	9.	163	.25
15TN	Kelsey No. 30	9	168	.25
16TN	Kelsey No. 77, 30x3½	9	104	.15
17TN	Kelsey No. 110	5	162	.25
18-TN	Kelsey No. 115-118-120	5	169	.25
19TN	Kelsey No. 88	5	96	.15
20TN	Dodge	7	III	.20
21TN	C. W. C. & Standardized	7 Sp.	84	.15
22TN	Goodyear	8	88	.15
230TN	Hayes	5	126	.15
24TN	Kelsey No. 88	5	51/22	.10
24TN	Baker Assem.		192	.30
26TN	Stanweld 76, 30x3½	7	117	.20

	RIM BOLTS.							NUTS.			
5	see sizes in table at bottom of page	when order	ring.		Nut						
Bo		Used with		Price	No.	S	ize	1	Bolt No.		Eac'ı
N	o. Size	Nut No.		Each	24N	Sp	ecial	1/2-20	4	.127	\$9.25
2	7-20 SAE Th	. 107N	81	\$0.15	48N	3/4	hex.	re-14	8	31/23	.05
3	½-20 SAE Th	143N	83	.15	68N	11	hex.	76-14	8	31/26	.05
4	½-20 SAE Th	. 24N	75	.15				15-20			.05
5	16-20 SAE Th89-107-125	-165-175N	57	.12				16-20		-	.05
6	76-20 SAE Th	. 89N	69	.12				75-20		-	.05
7	16-20 SAE Th	. 107N	62	.12		-					
8	76-14 USS Th	.4868N	66	.12				1/2-20			.05
9	75-20 SAE Th	. 89N	68	.12				1-a-20			.05
10	175-14 USS Th	. 68N	81	.15	175N	3/4	hex.	<sub>1</sub> -20	5	14	.07

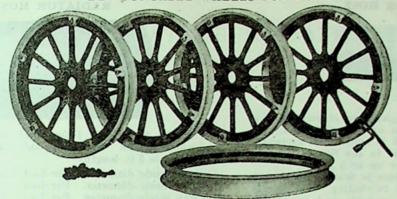
Table Showing Sizes and Types of T-N Rim Bolts, Which We Recommend for Repair and Replacement Use with the Various Makes of Rims.

Size of Rim	Buick 1921	Buick 1922	Jaxon	Baker	Kelsey Nos. 88- 110-115- 118-120 210 and Goodrich	Kelsey Universal and Permanent Straight Side	Cleveland Detroit Perlman Prudden Stanweld	Firestone Goodyear	Kelsey No. 30-77	Kelsey No. 100	Firestone Steel Felloe
30x3½" 3½" over 4" 4½"	30 5D 5E	2C (31x4) 2D 2E	7B 7B 3C*-7C 3D*-7D	4C 4C 4C 4C	5A 5B 5C 5D	6C 6C	7B 7B 7C 7D	SB SB SC SD	9B 9B 9C 9D	9C 9D	10B 10C 10D

<sup>3</sup>C and 3D bolts are 1/2" diameter used with Jaxon rims on 1919 Oldsmobile only.

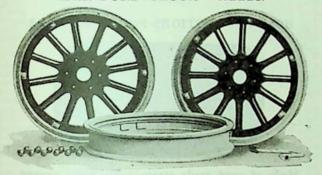
	THE	OAM	DLLL	IRON CO.	, Sui	P LILO	009-13	CASS	VE.	., 51.	LOUI	O. A	0. 26-	TUBAL
Detail o	f demounta	ble rim	equipme	nt as used on	RIM late mo	SPECIFICA del cars and	TIONS.				repair	or rep	laceme	ent.
Allen-	Model	Size	Rim	Wedge B			rear Mo	del	R m Size	Rim		Wedge	Bolt	Nut
18-19	Ali Ali 43	NEXT 12	F-E F-E	HTN S	H 65N C 65N	8 29%	All		2-34x4   2x4	F-E K-#30 F-E		11C 15TN 11TN	5C	GAN
71	43	22X1 1	F-E Jax	HITN S	C 107N	-	y All	3	2x4	K-=100 K-=110		14TN 27TN	7.43	
18	All	DIX4	F-E F-E		C 68N	2	9 R-1		12×4 12×4	K-=110 K-110		17TN 17TN 12TN	5C 5C 5C 5C 5C	89.5
19 20	19 8-20	34×43 <sub>2</sub>	F-E F-E	11TN 8	D 68N		La Fayette-		2x4	K-119		12TN		657
Auburn-	Ann	34x435 34x435	F-E	HTN S	D 65N		Lexington-		2X412	F-C Goodi.		HTN. Spec.	SD SC	1253
24	All 19B	Sixi Sixi	F-E F-E	11TN 3	C 68N		1 8	3	Ex4	K-=110 K-110 K-110		17TN	5C 5C 5C	
21	All All	32-33×4	F-E F-E	11TN 3	C 68N C 68N		Liberty-	3	12×4 1/2	K-110 F-E		17TN 17TN 02TN	101)	663
Briscoe-	All	30x3%	Ci.Jax.	7ASTN 7	TH 107N		Lincoln-		32x4	F-E		HTN	8C	63
	All	30x312	CL ( Jax. H CLH	230TN 5	H 107N A 175N A 175N		Locomebile—		12×45 <sub>2</sub>	K-#120 Cl.E-A		18TN	5D 8D	683
Buick-	D44-45	32-34x4	Baker	3TN	IC 21N	1	Marwell-		31×11/2	F-C		110TN 110TN	SD	
17	D54-55 D34-35 E34-35	20X312 20X312	Baker Cl.Pru Cl.Per.	25TN 23TN 7TN	7B 197N 7B 197N		D All 20-21 25		30x31/2	Cl. K-Ess Cl. K-Ess Jax		ISTN ISTN	9B 5A 7B	1073
18	E44-45 E49-50	34x43 <sub>2</sub>	Per. Per.	STN	C 107N		Mitchell-		30x312	CLK-88		PITN	5.4	690
18 19 19	H44-45 H49-50	32×31 <sub>2</sub> 33×4 34×43 <sub>2</sub>	Per. Stad. Stad.	STN	1075		16-17-18 All	c	32-34x4 33x4	S-#21 S-#76 S-#76		STN STN	10	
29 29	K44-45 K45-47	13x4	Stzd.	STN STN STN	C 1072 C 1072 C 1072 C 1072	the bar !	Moon-		izxi	F-E		HTN	sc	68
21	K49-50 44-45	34×43 <sub>2</sub> 33×4 33×4	Own Own	STN	7D 1078		Nash- 68		2x112	F-E F-E	-	HTN	SD SC	64
22	46-47	31x41 <sub>2</sub> 31x4	Own Own	STN	5D 1072 5D 1072 5E 1072			4-5	14x11-2	F-E Lax.		HTN	8C 7C	64 107 64
22	44-47 48-49-59	33x4 34x43 <sub>2</sub>	Own Own	STN	5E 1073 2C 1073 2E 1073		19-20-21-22 683 20-21-22 683	1-1-5	31x43-	F-E F-E		HTN	SD SD	64
16-17 18-19	All	36x432 34x112	K-PSS K-PSS	DITN DITN	6C		National— All		HXII-	CLF-A		HTN	SB SD	
20-21	All 59	34x452	K-PSS K-#120	13TN 18TN	SC SD		20-21-22 All		34x11/2 32x11/2	F-C F-C		HTN	SD SD	65
Case-	All	TEXT12	K-PSS S-#21	STN	ic		Oakland— 16 16-17 50	-31	IIXII-	Baker Baker		STN STN	40	21
Chaimers—	v	34×43 <sub>2</sub>	F-E K-#30	HTN	SD 652	211	17 18-19 All		32x4 32x4	Baker Per		STN	16 10 10	107 107
18-19 18-19	All SP TP	22x1	K-230 K-230 K-2100	15TN 15TN	9C		Oldsmobile-		32×31 <sub>2</sub>	Jax Baker		STN	4G	
29-21-22	6-39	131×4 32×4	K-=100 K-=100	14TN	9D 5C		17 45	5P 7P	31x1	Baker Baker		STN STN	4C 4C	21
Chandler— 15-16-17 18-13	All	34x1 34x4	F-E F-E		3C 683		17 15		32×4 32-34×4	Baker Haker Per.		STN	1C 4C	21 21 21 23 24 24 24 102 143
29	All	31X4 (33X4 (33X4	Stad. F-E F-E	21TN 11TN	781 482 8C 683		D 37.	B	32x4 34x43 <sub>2</sub>	Jax. Jax		STN	7C 3C 3D	
Chevrolet-	Open Closed	34x45	F-E	HTN	MC 683		21-22 All Overland—		32x4 32x4	Jax Jax		NTN	ic	107
17	F-2-5 D	32x31e 34x4	Det. Det.		7B 1077 7C 1077 7B 1077		16 83		32×3½	S-=21 S-=21		STN	7B	
18	FA-2-5 D	30×314 32×314 34×4	CLJax Per. D. & P.	STN	714 1071		17-18 28 17-18 84 17-18-19 90	. 55	31x1½ 32x4 36x3½	S-#21 S-#21 CLS-#22		STN	7D	
12	490 B-G	30x332 32x335	Cl Jax. Strd	STN	7H 1073		19 1		30x315	CLS-=22 CLS-=22		STN	7B 7B 7B	
20-21-22 20-21-22 Cleveland-	F-11 490	30×31 <sup>3</sup>	Cl Jax	TN	TR 1077		Packard—		30x31	S-CL		1 GTN 26TN	7H 7H	
20-21-22 Cole—	All	32x4	F-E F-E		SC 653		15-16 Al		3'x415 31x115	CLF-A CLF-A		110TN 110TN	SD SD	6
16-17	All 870 Other	32x4% 31x4	Goodr.		SD 1250 SC 1250		19-20 Al 21 Si 21-22 Tv	x	31x1½ 32x4 34x1½	F-C K-=110 F-C		116TN 17TN	SC SC	61
19-20	All	1 32×436 1 32×436	K±30 F-E F-E	15TN 11TN	5D 65		Paige-	,	32x4	K-21e		110TN 12TN	\$D \$C	53
Columbia—	All	32×41/2	F-E		SD 65		16 38 16 46 17 39		32x1 31x4	K-=30 K-=30 K-=30		15TN 15TN 15TN	9C	
Davis-	All	32x4	F-E F-E		SC 68:		17 51 18 39		32x4 34x4 32x1	K-=30 Parker		15TN	9C 9C 2B	45
Dixie-	All H-879	22×1	8-76		5C 683		18 55 19 49	13	31x1 33x4	K-=100 Stzd.		MITN	2D 78p 5C	i
Dedge-	All	32x312	S-#21 K-#100		TR		19 55 29 Al	1	32x1 34x4½ 32x4	K-=110 K-=115 K-=110		INTN INTN	5D	
17 18-19 29	All All	22x31 <sub>2</sub> 22x31 <sub>2</sub> 22x31 <sub>2</sub>	Dodge Dodge	SOTN	7B		Faterson— All		32X4	K-=110		12TN	5C 5C	107
- 21	All	22x31 <sub>2</sub> 22x4	K-210 K-210	TN	SR /		Peerless-	1	31x1	Stzd. 8-=21		STN	7C	
Dert-	All	30x33 <sub>0</sub>	Cl.Det.				17 A1 18 A1 19-20-21-22 A1		31X1	F-E F-E		HTN	10 80 80	61
15-19	An.	30x315	CL   Det /   Jax.     CL   Jax	1ATTN	7B 197		R. & V	1	31×4%	F-E F-E		HTN	8D 8C	6.6
21	15 All	Sex21	CWC-CI	TN	7H 107 7H 107 7H 107	,	Reo- 1.J	The same of	32×11/2	F-E		HTN	SD	6.
Elcar-	D-f	23×4	8-76		te		17 R-	8	34×13/2 34×4	8-=21 (8-=21 (F-E)		TTN HTN	7D 7C 8C	*
Eigin-	A'I Air	32x31 <sub>2</sub>	F-E F-E	10TN 11TN	KB 68.	i i	19-29-21-22 Al Saxon-		34x1	F-E F-E		HTN	SC SC	
19-29-21-22 Essex—	All	23x4	V-E K-#110	HTN HTN	se es	*	17-18 A1			(S-=21 F-E		STN	7B 8B	65
21-22	1	5.X1	K-110	11TTN 11TTN	5C 35		Scrippa Booth		32×31 <sub>2</sub> 32×4	P-E F-E		HTN	SB SC	51
Ford-	Closed	20x312	CIK-ES	19TN 19TN	5A		-11-21 6-1		32x4	Jax   K-=110		TN 17TN	1C 5C 5C	140
29-28	Truck Closed	32x112 39x212	K-2115 CL 1 K-88	ISTN 19TN	A S		Sheridan-		3"X1	K-110		12TN		110
(Front) 21-22		16x31g	CL K-SS	270TN 27TN 230TN	5A 107		Stearns-		33x4 -2x112	Stzd Jax.		STN	7C 7D	163
(Rear) 21-21	Truck	\$2x41 <sub>2</sub>	K-=115	18TN 226TN 24TN	SD Year		Stephens-		Stx119	F-E		HTN	SD .c.	- 0
21-25	Closed	36x31 <sub>2</sub>	CI (K.ss	230TN	5A 50	V.	Stodebaker—Al		32x4 31x1	8-#76 K-#30		STN ISTN	5C	
Gardner-	All	32×212	Jax.	STN	7B 1e7		18 1	1	32×31 <sub>2</sub> 3°x1	K-=30 K-=100		15TN 14TN	9B 9D	
10-17-18	AH	32x31 <sub>2</sub> 32x31 <sub>2</sub>	F-E F-E	10-11TN	SB CS		1, 6		34x4 32x31/2	(K-=30 (K-=100 K-=100		HTN	9f) 9f)	
Haynes-	HX	22×4		HTN	M. 61		19 6 79 A1	1	32x4 32x1	K-=100 K-=110		DTN DTN 17TN	5C	10
17 17	34-45 36-37 49-41	34x4 34x4 34x43 <sub>0</sub>	P-E P-E	16TN 16TN DTN	NO 61		Velie Al		32×1 32-31×1	K-=110 Goody.		12TN 22TN	SC SI	15.
18 19-20	28-39 A11	31x4 21x1½ 22x1	F-E F-E	UTN	SC SS		70-21-22 124		32x4 32x31 <sub>2</sub>	F-E F-E		HTN	SE	683
21	50 47	34×41/2	F-E F-E	HTN HTN OTN	8D 60		Wertrott-		32×4	F-E		HTN	SC -	613
Hudson-	11	34×11/2	F-E	HOTN	SD G	N.	Willys-Knight-	- AT 15	12x115	F-E F-E		HTN	NP.	63.5
16 17 17-18	6-49 Sup. 6	34x4 34x4 32x44	K-=30 K-=30 K-=30	DATA DATA DATA	941		13-18-19 AI		2 x412	8-=21 8-=21		TN TN TN	Nin.	Tan-
	Sp'tr Sup. 6	31x4	K-#30 K-#100 K-#120	HYN	9D 9D		Willys-Six-		37×415	8-276		GTN		13/00
15							19 All		William W.	15 - 415		T 100 1 1	24.	
	Sup. 6	34×446	K-118	unless marked Cl. 6 F - Firestone: S. d. Goodf Goodf	515		Winton- 15-29-21-22 Ai		34×11,	8-=21 F-A&C		110TN	ND:	4836

DEMOUNTABLE WHEELS FOR FORD CARS.



Complete equipment illustrated above-including five rims, 30x31/2 (four applied to wood wheels and one spare), 24 hub bolts, and socket wrench. The wheels are made of second growth hickory, well seasoned. Furnished in varnished natural wood or painted black.

#### REAR FORD TRUCK WHEELS.



For 32x4½ Pneumatic Tires. These wheels are regularly furnished with spare Rim and crated Two Wheels to the crate, with complete Rim Equipment, Wrench and Hub Bolts, ready to apply Ford Truck Hubs. Wheels are Black Varnish Finish.

Per Set (2) ......23506 \$30.00

Ford Straight Side, with Spare Rim.

Natural finish. Per set.....20506 31.00

#### CLINCHER WHEELS FOR FORD CARS.



Crated Ten Wheels per crate; Bored for Hub and Hub Bolts; Black Varnish Finish; good quality wood stock.

Size 30x3. Price, each......2652 \$4.00 4.00 In lots of 10. Price, each.....2401 4.00

# ADJUSTABLE RIM LUG SHIMS.

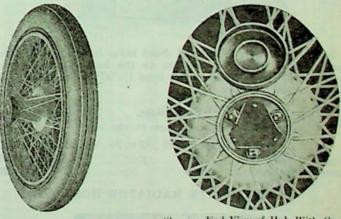


Will conform to all kinds and sizes of rim lugs. Goes on the bolt with lug and cannot lose off. Packed in counter display boxes, 1 gross each. Made of Flexible metal.  

Each wheel constructed with 12-15%" spokes and 23/4x15%" wood rims.

Complete set consists of two 32x312 S-A-E Band Wheels, bored for hubs, but hubs not furnished. Finished in black Packed two wheels to the crate. Per pair ..... 15003 \$25.00

#### PHELPS DEMOUNTABLE WIRE WHEELS FOR FORD CARS.



Showing End View of Hub With Cap Removed. Note the Three Cap Screws and Spring Lock.



Carrier

Simple and easy to put on or take off, and once on cannot come off; a telescoped gear drive. There is no lost motion, no squeaky or noisy wheels. The inner hubs are made without threads and cannot be put on wrong. A positive lock, simple and never out of order. Colors White, Black or Cream.

A set consists of 5 wheels, 4 inner hubs, 4 lock plates, 1 carrier with dummy hub and cap and lock parts. 

#### VULCO RADIATOR HOSE.



Three Ply.

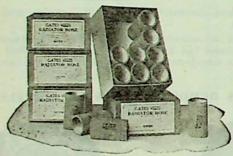
Vulco Radiator Hose is built to give long, efficient service and is guaranteed to render the car owner satisfaction.

Vulco Radiator Hose is furnished in substantial cartons packed six 3-foot lengths of a size to the box. Sizes are furnished from % inch in diameter up to 3 inches

furnished from ¾ inch in diameter up to 3 inches.

Every 3-foot length of Vulco Hose is marked by inches for the convenience of the dealer in cutting. The size is stamped on the Hose at 6-inch intervals and no matter how much is cut off a 3-foot piece, the size is always visible.

Size	3 ft. to 18 ft. Per ft.	18 ft. to 36 ft. Per ft.	36 ft. & over Per ft.	Per ft.
1	252	230	213	\$0.33
11/8	274	252	236	.50
	286	267	249	.50
	308	283	262	.60
	320	308	284	.60
	343	324	308	.60
197	367	349	321	.70
11/8		365	345	.80
	408	381	362	.80
011	446	128	408	.80
011	483	462	443	.90
23/4		487	466	1.00
	551	536	512	1.10



Ford upper hose 2"x4" and Ford lower hose 1¾"x2¾" are furnished 12 pieces of one size to the box. Dodge upper hose 1½"x7" and Dodge lower hose 1¼"x7¼" are packed 10 pieces of one size per box.

#### Ford Sizes.

(Packed one dozen to the box.)

Less than 12 12 to 24 24 and over Each Upper 2 x4 in...  $14\frac{1}{2}1$   $13\frac{1}{2}7$   $12\frac{1}{2}39$  \$0.25 Lower  $1\frac{3}{4}x2\frac{3}{4}$  in... 102 99 86 .20

#### WATER-TITE RADIATOR HOSE.



Red Rubber for Ford Cars.

336 P. C. Gross lots, 401 P. C.

#### RADIATOR HOSE.



A special grade 3-ply Hose, made to resist the action of hot water and oil. Made of good grade fabric and rubber. Furnished in 3 ft. lengths.

		it. lengths.											
1 -inch	inside	diameter.	Per	foo	t.	 			 		٠.	.\$	0.33
11/s-inch	inside	diameter.	Per	foc	t.	 					٠.		.50
11/4 -inch	inside	diameter.	Per	foc	t.	 							.50
11/2-inch	inside	diameter.	Per	foc	t.	 							.60
13/4-inch	inside	diameter.	Per	foc	t.	 							.70
2 -inch	inside	diameter.	Per	foc	t.	 							.80
21/4-inch	inside	diameter.	Per	foc	ot.	 							.80
21/2-inch	inside	diameter.	Per	foc	t.	 	 						.90
			700 1	P (									
			109 1										

#### HOSE CONNECTIONS FOR FORD CARS.



#### GASOLINE HOSE.



Made of 4-ply high grade fabric, with special fabric lining that is heated to make it resist gasoline action, it is also steel lined to prevent kinking or collapsing and to hold lining rigid in hose. In 10-ft, lengths only.

	Per foot	\$1.00
1 -inch 4-ply.	Per foot	1.50
11/4-inch 4-ply.	Per foot	1.85
1½-inch 4-ply.	Per foot1608	2.00

#### GARDEN AND LAWN HOSE.



Com	petition.	3-Ply.
Com	bention.	J. I Iy.

		coupled.			106	.17
	T	ehigh 5.	Plv.			

#### Lehigh. 5-Ply.

1/2-inch.	50-foot	lengths,	coupled.	Price.	per	ft	131	\$0.20
3/4-inch.	50-foot	lengths,	coupled.	Price,	per	ft	146	.22

#### Cumberland. 5-Ply.

1/2-inch.	50-foot	lengths.	coupled.	Price.	per	ft	123	\$0.18
			coupled				152	.20

# Eton Moulded. 2-Ply.

Varinch	50 foot	langthe	coupled.	Dring	nor	f+ 158	\$0.20
/2-mcn,	20-1001	rengths,	coupled.	Price,	ber	11	-
3/ inch	50 foot	langtha	coupled	Daine		64 162	.22
/4-111CH.	OU-TOOL	renvins	compled	12 F1CC	1161	11 103	

All our Hose is guaranteed against defects in material and workmanship for one garden-hose season.

# SPECIFICATIONS—RADIATOR HOSE

Make	Year	Model	Upper	Lower	Make	Year	Model	Upper	Lower
Make	Tear	Model	Hose	Hose	Make	- Tear	Model	Hose	Hose
Allen	1917	37 37	1½x 6½ 1¾x 5	1%x 5 14x 5	Handley K	1918-19	A, B 45	11/4×11	11/4×10
Allen	1918	41 43	21/4 x 5 21/2 x 5	11/4 x 4 2 x 21/4	Hanson	1920 1919	54 A, AY	1 x 9½ 2 x 25%	1 x121/2 2 x 31/2
Allen	1920-21	43	2½x 6	2 x 21/2	Harroun	1920	A, A2	2 x 41/2	2 x 41/2
American	1916-17-18	B & C 7 W Motor	1½x15½ 1¼x 9¼	11/4 x 81/2 11/2 x 13	Haynes	1920 1916-20	A-42 34 to 39, 45	2 x11 11/4 x111/2	2 x15 11/2 x 81/4
Anderson	1919-20	400C, AE 30, 40	14x 9½ 14x10	1½ x10 1½ x 9½	Haynes	1917-20	40, 1, 2, 3, 46 17	11/4 x121/2 11/4 x141/4	1½x 7½ 1¼x 9¼
Apperson	1916-17	"6"	11/2× 71/2	11/2× 41/2	Haynes	1921-22	48	114 x131/2	1½x 9½ 1½x 7½
Apperson	1919	8-16 8-20	2 1/4 x 12 3 x 10	3 x 8½ 2 x11	Hollier	1919-20	206. 206B	114x 7	114x 7
Apperson	1920	8-20 8-21, 8-22	3 x12	2 x 8	Hudson	1916	Super 6	1½x 7% 1½x 5%	1½x 7½ 1½x 9¼
Auburn	1918-19	6-39, B. H, K	1½x13	11/2×13	Hudson	1920-22	Super 6	11/2x 634	1 116x 916
Auburn Beggs	1920-21	6-39, 6-51 20T	11/4 x 81/2 11/4 x 51/2	1¼ x12½ 1¼ x11¾	Hupmobile Jackson		R 349-350	21/4 x101/2 21/4 x101/2	2 x 9 1%x 7
Biddle	1916-17	D, H B-1, B-5	2 x 7½ 21/8 x 4¼	1½x 7½ 1%x 5	Jackson		Cont. Mtr. H. S. Motor	11/4 x10 11/4 x14	1%x11 1%x 7
Briscoe	1916-19	1-24	2 x 5	2 x 5½	Jeffery	1916	472	114x 81/2	11/4 x 81/4
Briscoe	1915	1-34 D-36, 37	2 x 5% 1%x 2%	2 x 5% 1% x 4%	Jeffery		671 All	1½x 4 1½x 6	114 x 4 114 x 71/2
Buick		D-54, 55 D-44, 45	1 1/4 x 3 1 1/4 x 7 1/2	1½x 8¾ 1¼x 7½	Jordan	1916-21 1919-21	B, C, F	1½x10¾ 1¼x15	1¼ x12 1¼ x 2¾
Buick	1916	C-24, 25	114x 91/8	1 x 8	Jordan	1922	MX		1
Buick	1918	E-34, 35 E-44 to 50	11/4 x 21/4 11/4 x 71/2	1¼x 4¾ 1¼x10½	King	1920 1915-16	4-80, 6-55 D. E	1½x 4 2¼x 7¾	1% x11% 1% x 3%
Buick	1919-20 1921-22	H & K 44 to 50 21, 22-44 to 50	11/4 x 71/2	1¼ x10½ 1¼ x15	King		FF	21/4 x 81/2 21/4 x 81/2	134 x 334
Buick	1921-22	22-34, 35, 36, 37	11/4 x 8	1	Kissel	1920	CB-6	114x 85%	134 x10 %
Case Chalmers	1916-17	U, V 35 A. V	1½x 9 2½x 5¼	1¼ x 6¾ 2¼ x 3		1915-18 1920-22	6-38 Str. Rad.	1¼x 9½	11/4 x 914
Chalmers	1918-21 1916-22	35 C, D All Models	2½x 5¼	21/4 x 41/4	Kline	1917-18 1919	6-38 F, P, GA	114 x101/2	1¼ x12½ 1¼ x12½
Chevrolet	1916-17	490	1%x10½ 1¼x 4%	1%x10½ 1¼x 3% 1¼x 3%	Kline	1920-21-22		1¼ x10½ 1¼ x 7¼	1 114x16
Chevrolet	1918-22	490 FA	1¼x 4% 1¼x 7	11/4 x 3 1/8 11/4 x 4 1/8	Leach	1920 1920	3-20 20-A	1½x 6¼ 1½x 6½	114x 64 114x 64
Chevrolet	1918-19	"8" FB	114×10%	11/4 x 51/2	Lexington	1918-19	R	134 x12	114x 9
Cleveland	1919-22	40	1¼ x 6½ 1¼ x 3½	11/4 x 61/2 11/4 x 61/2	Lexington	1921-22	S	1¼x 6½ 1¼x 7	14x1446
Cole	1917	T. K, S	2 x18	1¼x 3¾	Liberty	1916	10A 10B	2¼ x 65% 2¼ x 65%	214 x 1238 214 x 938
Cole Columbia	1918-22	"8"-870	11/2×243/4	114x 3%	Liberty	1919	10B	214 X 6%	234x 93%
Columbia	1918	A. B C. D. 6S	11/4 x 7 11/2 x 3	1½ x10 1½ x10	Lincoln	1920-21-22		2¼ x13½ 1¾ x16½	24x 4% 1%x11%
Columbia	1919 1919-21	J C Cont Mtr. 7 R Series	11/8× 4	11/4×13	Locomobile		18-2 18-2	136 X 234 136 X 234	1%x 5
	1919-21 1920	Reut Mtr	11/2x 8	114x131/2	Locomobile	1919-20	48	138x 234	1%x 5
Crow-Elkhart	1916-20	42	2¼ x12½ 2¼ x16	214 x14 1/2 214 x18	McFarlan	1919-22	Mana mil	2 x 8 2 x 8	1¼x 5 1¼x 5
Daniels	1920	"6" 8-D	1½x15 1¾x 3¾	1 x 6 134 x 85%	Madison	1916-17 1919-20	All	11/2×15%	1 x 8½ 1 x 8½
Davis	1916-18 1917	F. H. J	11/4×11	11/4 x121/2	Maibohm	1918	В	2 x 61/2	2 x1214
Davis	1920-22	H-1, J All	1½ x12 1½ x11	1 x14 11/4 x12 1/2	Maibohm	1916	B 1st Series	1%x 6% 1%x 3%	1% x13 1% x 3%
Dispatch	1915-19 1920	All	2 x 6½ 2 x 6½	134 x14 2 x20	Marmon		34 34	1¼x 3¾ 1¼x 8¼	1¼x 3¾ 1¼x 3¾
Dixie Flyer	1917-18	56 L	21/4 x101/2	2¼x16¼ 2¼x 5	Marmon	1920-21-22	34	1¼x 3% 2¼x 4¼	114 x 378 214 x 414
Dixie Flyer Dodge	1919-20	HS-50, 70	2 1/4 x10 2 x14	2 x17	Maxwell	1916-17	25	216x 734	2%x 7%
Doage	1917-22	1 1	1½x 7 1½x 7	1¼x 7¼ 1¼x 7¼	Maxwell	1920-21	25 25	216 x 734   216 x 734	21/8 x 7% 21/8 x 7%
	1916-17 1918	All I-C-6	116x 7	1¼x 4½ 1¼x 4½	Mercer	1017-20	25	134 x 834	1%x 4%
	1919-20	6-80 .	116x 214	114x 614	Mitchell	1916-18	C, D	2 x 716	11/6×12
Dort	1916-19	6-80 All Models	214x 214 214x 7	14x 64 24x154	Moline K	1916	E, F, F-50 B	14x 84 24x 54	1%x12 24x 6%
Dort	1920	All Models	21/4 x 6 21/4 x 10	21/4 x 14 1/4 11/4 x 4	Moline K	916-17	C	214 x 53%	2 x 61/2
Earl	1922	10	272 110	1724	Moline K	1918-19	L	2½x 5% 2 x 6½ 2 x 5	21/4 x11 2 x 61/2
Elcar	1919-19	D "4"	1¼x 6	1¼x12	Moon 1	918	M 4 -	244 x12	1% x15 1% x14
Elcar	1000 99	"4"	3 x 5 11/4 x 4	3 x18 1¼x14	Moon1		3-36 Victory	21/4 x 8 11/4 x 10	1¼ x10 1¼ x12
Elgin.	1010		2 x 814	2 x17	Moon	920-21-22 1	R 20, 6-48	11/4 x10	114 x12
Elgin	1919-90-91	Series F Series H. K	134x 844 136x 744	174×17 176×1556	Moore	919	EM, C	1% x 8 1/2   1% x 8 1/2   2 x 7	1%x 9 1%x 9
Essex	1916-18	1, 6 A	216x 4	214×1414	Moore 1 Napoleon1	921	i. 11	2 x 7	2 x16
Ford	1911-16	T	2 x 4	134 x 234	Nash1	918-22	81 & 691 Series	11/2× 7	114x 41/2
Ford	1091 99	T	2 x 4 1	134 X 23, 134 X 23,	National 1	917-19	.6	11/2 x 31/4	114x 41/2
Geronimo	1920-22	G. T. R SE 45	214x 91/4	2¼ x15	National 1	917-19	'12" Series BB	1%x 3 1%x10%	1%x12 1%x13
Geronimo	1010 00	6A 45			National	920	Series BB	11/2×101/2	11/4×13
Glide	1916-18	6-40 B-10	2 x 71/2	2 x12½	Noma 1	919		114 X 8	1%x 6
Grant	1916-17	TR TT	214x 734	216x 416	Noma1 Oakland1		B 2, 34	11/4 X 8	1¼ x 6 1 x 8½
Grant	1010 10	TX. H	314x 734	214x 41/8	Oakland 1 Ogren 1	919-21-22 3	4B, 34D	11/4×161/4	1 x 3 3%
Grant	1920-21	HX	214 x 4 78 1	24x 4 24x 4	Olds 1!	917-21 3	-60 7. 37A	114x1614	1 1 x11 1/2
Halladay	1920	21, 22, 23, 24	1½x14½	1 x13	Olds	918-22 4	5, 45A, 45B, 46, 47 4"-43	114 X15 1/2	1¼x 6¼ 1¼x 6
			1		Ciderritin			174.	.4.0

# SPECIFICATIONS—RADIATOR HOSE—Continued.

Make	Year	Model	Upper Hose	Lower Hose	Make	Year	Model	Upper Hose	Lower Hose
Overland		82	134x 634	111X 7	. Seneca	1917-20		2 x131/2	2 x135
Overland	1916	83B	214x 716	214 x 71/2	Sheridan		"8"		
Overland	1916	84	23 x 33	254 x 714	S&S	1919-20	7 W Mtr.	11/2×101/4	11/4 x 9
Overland	1915-16	80, 81, 83	21, x 41/2	214x 612	S&S	1921-22	DP, H, DP. 1	114 x12	11/4×12
Overland		75, 90, 90CC	13 X 8	134 X 514	Singer	1920		2%x111/2	21/2×161
Overland	1917-18	85-6	13, x 614	134×10	Skelton	1920-22	All Models	236×101/2	2%x151
Overland		83BOE, 85-4	21, x 8	214 X 8	Standard	1920	66-68	114x 61/2	1%x 61
Overland	1918-19	90B, 90T	18 X 8	134 x 51/2	Stanwood	1921-22	A21, A22		
Overland		"4"	1%x 7%	2 x 614	Stearns K	1916-17-18	SKL 4	138x 6	11/8× 9
Owen Mag			154×101/2	156x 8	Stearns K	1916-17-18	SK	21/4×10	214x10
Packard		Twin Six	15xx 8	11/8x 5	Stearns K		SKL 4	186x 656	1%x 9
Packard		Twin Six	136x 9	156x 9	Stearns K	1920	SKL 4	1%x 6%	1%x 9
Packard	1920-22	Single Six			Stephens	1916-17	Salient "6"	11/4 X 8	114 x103
Paige		6-36, 38, 39	136×1334	1 x123-	Stephens	1918-22	Salient "6"	21/4×113/4	21/4×171
Paige		6-46, 51, 55	15ax 936	11 x12	Studebaker	1916-17	ED	178x 8%	11/2x 51
Paige		6-55	13 x 916	11 x12	Studebaker	1916-17	SF	176x 834	1%x 91
Paige		6-42	116x 916	116x1016	Studebaker		SH	1%x10%	11/4x 23
Palge		6-55	135 ×1036	114x12	Studebaker		EH	178×101/2	176x 82
Paige	1920-22	6-66	136x 936	1%x10%	Studebaker	1919-22	Light Six	1 x 4%	1 x 21
Pan American	1919-99	All Models	136×1054	114x1216	Studebaker	1919-21	Big Six Special Six	136×10	11/2x 8
Paterson			11/4×101/2	114×13	Studebaker	1923	Big & Special Six	1/2/11/	1 1/2/4 0
Paterson		6-50	114x12	114×14	Stutz	1918-99	G. H. S		
Peerless		54	2 x12	1 x 8	Templar	1917-19	W-42	11/2x 91/4	114x 7
Peerless		55	116x1316	114 x15%	Templar	1920	4-45	116x 914	11/4 x 8
Peerless		56	136x 6	1%x 4	Templar	1091 - 99	4-45	11/2× 91/4	11/4 x 8
Pierce Arrow		C3	116x 4	11/4 x 12 1/6	Texan	1918-19	A & B 36, 37	214x 6	214×16
Pierce Arrow		C4	2 x 8	11/1 x 63/1	Texan	1920	A & B. 38	21/4 x 6	214x16
Pierce Arrow		B4	2%x 934	134x 7%	Tulsa	1919	D-1	214 x10	214x17
Pierce Arrow		A4	256x 916	156x 614	Tulsa	1920	17-1	2 x10	2 x17
		C6	2 x 3	14x 634			22, 28	11/4 x 91/2	11/4×10
Pierce Arrow	1919-20	B5, B6, 32	236x 434		Velie		15-27	116x 9%	114x 9
Pierce Arrow		6B. C	11/4× 51/4	1½x 7 1¼x 8¾	Velie		48	11/4×10	14x11
Premier	1317-13		114 x 5%		Velie			11/4 x 91/2	11/4×10
Premier		T		114x 834	Velie		38	11/2× 9%	11/x 9
R&V Knight	. 1920-22	R	21/2×101/4	2¼ x17½	Velie	1917-19		1 1/2 X 3 74	1 15ty 3
R & V Knight	. 1920-22		214 x 934	2 x16	Velle	1921	39		
Reo "4"	1915-18	R. S	1 x 6	1 x 6	Velie	1922	58	11/4 0	1 11/4 95
Reo 6	.1915-18	M. N	1 x 6	1 x 6		1918	18	11/2× 8	1 14 X 2
Reo "6"		T6	1½x12	114x 9	Wescott	1919	A48	1½x 9	
Re Vere	1920	C-D	11/4 X 8	13/ix 7	Wescott		B38-C38	11/4 X 4 1/2	11/4 X 4
Roamer	. 1916-18	RAC	1½x10	1¼ x15	Wescott	1920	C48	1½x 9	11/4 x 2
Roamer	. 1918-19	475	114 x 81/2	11/4 x13	Willys Knight	1917-19	84, 88-1	2%x 3%	2%x 5
Roamer	. 1919-21	Cont. Mtr.	1½x10	11/4 x13	Willys Knight	1916-17	86	1%x 6%	11/4 X 81
Roamer	. 1920-21	Dues Mtr.	114x 81/2	1¼ x13	Willys Knight	1920-21	20		1
Roamer	. 1921-22	6		LANGE H	Willys Six	1917-19	89-6	1%x 81/4	134x 6
Saxon	1916-18	"4"	1%x12%	2 x 4	Winther	1920	751	1½x12¼	11/4 x 9
Saxon	1916-20	6.,	21/4×11	21/2x 7	Winton	1916-18	22	116x 514	11/4 x 25
Saxon	1920-21	"4"	Maria de la companya della companya		Winton		22A	1½x 6	11/4 x 24
Scripps Booth	. 1918-21	6-39	114x181/2	1 X 81%	Winton	1919-20	25-48	11/2 x 51/2	11/2×23



## IDEAL HOSE BANDS.

They will not buckle or cut the hose.

The double notch gives two sizes in one clamp.

Size of	Size of Hose,	Nickel-plated,
Ideal Clamps:	Inside Diameter:	per 100
%-inch	3/s-inch-2 Ply	\$4.00
7/s-inch		4.10
1 -inch	½-inch-4 Ply	4.30
11/s-inch	3/4-inch-3 Ply	4.50
11/4 -inch	3/4-inch—4 Ply	4.70
	1 -inch-3 Ply	
	1 -inch-4 Ply	
	11/4-inch—3 Ply	
	1¼-inch—4 Ply	
	1½-inch—3 Ply	
	1¾-inch—3 Ply	
	2 -inch-4 Ply	
30	02 P. C. Std. Pkg., 337 P. C	

Ideal Hose Clamp Assortment.

## HOSE BANDS.

	Suitable for Foot Pumps and Air Hose.
No. 1.	Inside diameter, %-inch. Price, per dozen\$0.36
No. 2.	Inside diameter, 16-inch. Price, per dozen 36
No. 3.	Inside diameter, 1/2-inch. Price, per dozen 36
	501 P. C.

#### UNIVERSAL HOSE BANDS.



Cold Rolled Electro Galv. Adjustable to fit any hose of any size. Consists of a ribbon like length of steel, with holes % inch apart, and scored between holes to make it easy to break off. Bolt and nut with each clamp. Packed 50 in a carton.

Junior	fits	1/4 to 11/2-inch hose,	O.	D. Per	100	\$ 5.00
Senior	fits	1 to 3-inch hose, O.	D.	Per 100	)	10.00

403 P. C.



# RAB WIRE CLAMPERS.

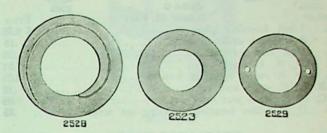
Press ends of his day of his day

This Clamper can easily make of a piece of wire a clamp around hose couplings, barrels, tubs, boxes and other articles requiring to be tightly handed together.



Exclusively Wholesale Supplies ST. LOUIS, MO. 809-19 Cass Avenue y number.

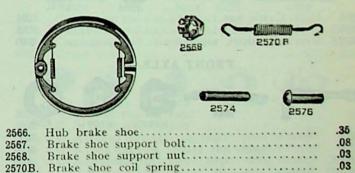
Ghi pany	Order b
REAR AXLE PARTS.  Number Name of Part  2501B. Axle housing, right, with sleeve	Price \$ 9.25 9 25
2503A 2503B 2503C 2503C 2503D 2503E 2506	
2503E. Axle housing bolt and nut	05
2505D. Axle shaft, tapered	1.60
2508. Axle shaft roller bearing	05
2512 C. 2513 C. 2513 C. 2513 C. 2513 C. Diff. case, left	1,40
2514 2519 252	В
2514B 2519 A 2522 2514B. Diff. case stud and nut	3.00
2518 2520B 2524B 25 2521B. Diff. gear key	97B 05 10 35
25258 2527 2540 25	59



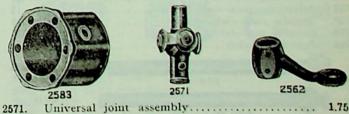
Number	Name of Part	Price
2528A. Di	f. thrust washer, metal	50



	A			(===		
	2557. R	2558 L	2563	2564	2567	
2557.						.15
2558. 2559.	Hub	cam shaft	bushing			.05
2564.	Leve	r clevis pin				.03



	n	
(0)		



.80 2526B. Diff. spider ..... No. 2518 Gears interchange to the Model 490 Chevrolet.

DUPLICATE REPAIR PA	ARTS FOR FORD CARS.
2578 2584  Number Name of Part Price  2578. Joint housing plug. \$ 0.05  2579. Ball joint grease cup. 1.5  2580. Ball cap gasket	Number
REAR AXLE PARTS.	FRONT AXLE.
2587. D. S. roller bearing	2728 2736 2736 2736 200
2589B. D. S. ball bearing assembly       1.00         2589. D. S. ball race       .25         2590. D. S. ball retainer       .03         2591. D. S. ball thrust collar       .25         2592. D. S. ball bearing, each       .03         2593. D. S. roller bearing sleeve       1.50	2733B. Front radius rod 1.75 2734. Front radius rod nut05 2736. Front radius rod ball cap 12  2722 2738 2738 2741  2729 2739 2739 2742
2595B. Drive shaft, tapered. 3.00 2596. D. S. sleeve	2741. Radius rod ball cap stud and nut
FRONT AXLE.	2800. Front wheel
2694. Spindle body—right     2.00       2695. Spindle body—left     2.00       2696C. Spindle arm—right     .50       2696D. Spindle arm—left     .50       2697. Spindle arm nut     .05       2704. Stationary cone     .15       2705. Adjusting cone—right thread     .15       2706. Adjusting cone—left thread     .15       2707. Spindle nut—right thread     .10       2708. Spindle nut—left thread     .10       2709. Spindle washer     .02	Write for prices.  2803. Front hub assembly, less flange
2710 2711 2710 N	2804B. Outer race, new style, assembled with balls.       .50         2805. Inner race, new style.       .15         2805B. Inner race, assembled with balls.       .70         2806. Outer ball retainer.       .02         2807. Inner ball retainer.       .03         2808. Dust ring.       .06         1 P. C.

	WHEELS.		
Numb	er Name of Part I	Price	
2809.	Felt washer front and rear hub\$	0.05	
	Large balls, each		Mark the second
2811.	Smalls balls, each		
2814C.	Rear wheel, taper hub		
V	Ve at all times can furnish used wheels without		
8	hubs. Write for prices.		
2815C	Rear hub, tapered, less flange	1.50	
20100.	acear man, capered, less manger	teres	
			0000 Pi
6	2816 B 2825 2910		3020. Piston complete
			MOTOR.
			Number Name of Part Price
-		nire.	<b>3020.</b> Piston complete, oversize .0025
	2808 2817 2828 2903		3020B. Piston complete, oversize .015
2816R	Rear hub key (for taper axle)	.03	3020C. Piston complete, oversize .025 1.70
2818.	Rear hub brake drum	.40	<b>3020D.</b> Piston complete, oversize .03125
2819.	Hub cap, black	.15	3021. Piston only
	Hub cap, nickel	.15	3021A. Piston only, .005 oversize
2825.	Hub bolt and nut	.06	3021B. Piston only, 015 oversize
2828.	Rear hub lock nut	.05	<b>3021C.</b> Piston only, .025 oversize
2847.	Demountable rim bolt	.05	3021E. Piston only, .033 oversize
2848.	Demountable rim bolt nut	.05	3022. Piston pin
2848B.	Demountable rim bolt nut	.05	3022X. Piston pin, 1/64 oversize
2853.	Front cross member	.90	332/2. 1 333 pt. 3 3
2854B.	Rear cross member	1.20	
	GASOLINE TANK.		3023. Piston ring
			3023B. Piston ring, oversize
			3023D. Piston ring, lap joint, oversize
	(3)		
			30223 3044
	2901		3024. Connecting rod
2901.	Filling plug	.10	
2908. 2913.	Pet cock	.15	
2010.	reed pipe gasket	/	3025 3026 3029 3035 3040
0			3025. Connecting rod cap bolt and nut
	3003 3008 3010 3011		3029. Connecting rod clamp screw
-			3030. Crank shaft 9.00
	3014 3016 3022		
3002.	Cyl. head gasket	.35	3031 3032 5033 3005 3018
3003.	Cyl. head cap screw	.05	3031. C. S. rear bearing cap
	Cyl. head cap screw	.05	3032. C. S. front bearing cap
3004.	Cyl. head outlet connection	.35	3034. C. S. bearing bolt, center and front
	Cyl. head outlet connection	.35	3035. C. S. bearing bolt nut
3005.	Cyl. head outlet con. gasket	.05	3040. C. S. starting pin
3006.	Cyl. head outlet hose, 2x4	.15	3040B. C. S. starting pin
3007.	Cyl. head outlet hose, 2"x3¼"	.05	
3008.	Cyl. head outlet hose clip	.05	
3010.	Cyl. cover bolt and nut	.03	3045
3011.	Cyl. cover cap screw	.03	0042 3043 3045 3049
3012.	Cyl. cover felt	.05	3042A. Cam shaft front bearing, babbit lined30
3014.	Cyl. cover and crank case bolt and nut	.08	3043A. Cam shaft center bearing
3015.	Cyl. water inlet connection	.30	3044. Cam shaft rear bearings
3016.	Cyl. inlet connecting screw	.05	3046. Cam shaft bearing set screw
3018.	Cyl. water inlet gasket	.05	3048B. Time gear, small, special
		401	P. C.

### MOTOR-Continued



3050B.	Cam shaft large gear lock nut	.10
3051.	Cam shaft small gear key	.05
3052.	Valve	.15
3052B	Valve, 1-64 oversize	.15



3054.	Valve spring	.05
3056.	Valve spring seat, per set of 8	.05
3057.	Valve spring seat pin, per set of 8	.05
3058.	Push rod	.10
3058B.	Push rod, 1-64 oversize	.10



3060B. E.	xhaust manifold\$	1.50
3061. E	xhaust pipe pack nut	.20
3062. In	nlet pipe	1.30
3063. In	nlet and exhaust pipe gasket	.03
3064. I	nlet and exhaust pipe gland	.02
3064A. C	ombination gasket, 3083-64	.05
3065. It	nlet and exhaust pipe clamp	.10
3066. I	nlet and exhaust clamp stud and nut	.08
3068. B	Breather pipe	.10
3070. C	rank case and cylinder gasket (left)	.05
3070B. C	rank case and cylinder gasket (left)	.06
3071. C	Crank case and cylinder gasket (right)	.05
3071B. C	crank case and cylinder gasket (right)	.06
3072.	Crank case and cylinder cover top screw	.03

	3073	3074	3078	3080
3073.	Crank case	arm bolt and nu	t, side	08
3074.	Crank case	arm bolt and nu	t, top	08
3078.	Crank case	front bearing scre	ew	05
3079.	Crank case	oil cock		
3080.	Crank case	drain cup plug		
3080B.	Crank case	drain cup plug ga	sket	03

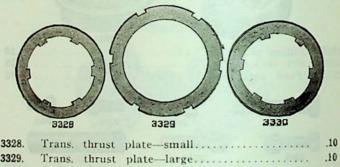
3088.B	3088	<del>c</del>	31	03
3112	3167	3168	3170	3173

3102.	Crank case lower cover gasket	.05
3102B.	Crank case lower cover gasket cock	.10
	Crank case lower cover screw	
3111.	Cylinder valve cover gasket	.03
3111B.	Cylinder valve cover gasket cock	.05
3112.	Cylinder valve cover stud and nut	.03

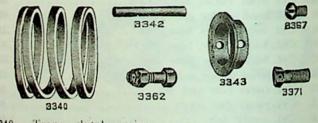
#### TRANSMISSION



old. I falls, triple gear assembly	313.	Trans.	triple	gear	assembly	0
------------------------------------	------	--------	--------	------	----------	---



	plate—large	



3340.	Trans. clutch spring	.35
3363.	Trans. cover felt gasket (front)	.05
3368.	Universal ball cap rear	.30
3371.	Universal ball cap bolt	.03

#### TRANSMISSION COVER.

# 3403 3372 3406B 3400

3409

Numi	oer Name of Part	Price
3372.	Universal ball cap and nut\$	0.08
3377.	Trans. cover felt gasket (pair)	.05
3377B	. Trans. Cover gasket (pair) cork	.15
3379.	Trans. cover sloping door gasket, felt	.05
3379B	Trans. cover sloping door gasket, cork	.08
3381.	Bendix gasket	.03

3406 C

3405

#### TRANSMISSION CONTROL.

3400.	Trans. clutch release ring	.20
3403.	Clutch lever screw and nut	.05
3413.	Trans, band assembly	.60
3415.	Trans. band washer	.03
3416.	Trans. band lining	.15



		3437		3443	0.402	
3419.	Trans. band	adjusting	screw			.10
3420.	Trans. band	adjusting	screw	nut		.05
				-	-	

3447	3467	2458
	3468 R	107578And 38M

	3468 R 3469 L	
3447.	Slow speed connecting device	.10
3467.	Hub brake, lever pin clevis	.10
3468.	Hub brake pull rod (right)	.50
3469.	Hub brake pull rod (left)	

0	0 10
3470 R 3471 L	

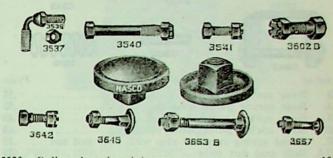
3472
3505





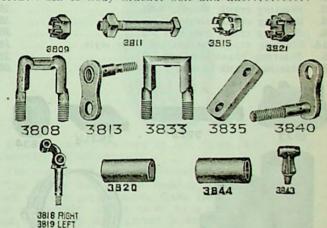
3470.	Hub brake rod support-right	.10
	Hub brake rod support-left	.10
3472.		.05

#### STEERING GEAR.



3536.	Ball and socket joint	\$0.10
3537.	Ball and socket joint nut	.02
3540.	Steering post bracket bolt and nut	.08
3541.	Steering post bracket bolt and nut	.08
3544.	Steering post bracket felt washer	.03
	BODY PARTS.	

3645.	Dash	bracket to dash bolt and nut	.05
3653B.	Dash	to body bracket bolt and nut	.05



# SPRINGS.

3800.	Front springs	2.50
3808.	Front spring clip	.20
3809.	Front spring clip nut	.03
3811.	Front spring tie bolt and nut	.06
3813.	Front spring hanger	.15
3815.	Front and rear spring hanger nut	.03
3816.	Front spring perch oiler	.05
3817.	Front and rear spring hanger oiler	.10
3818.	Front spring perch, right	.60
3818B.	Front Spring perch, right	.60
3819.	Front spring perch, left	.60
3819B.	Front spring perch, left	.60
3820.	Front spring perch bushing	.05
3821.	Front spring perch nut	.05
3824.	Rear spring	7.00
3833.	Rear spring clip	.20
3834.	Rear spring clip nut	.06
3837.	Rear spring tie bolt and nut	.06

SPRINGS—Continued.	RADIATOR FAN—Continued.
3834 3837 CB45	3966
3847	3973 4034 4058
3905 000000	Number Name of Part Price 3961B. Fan blade rivets. Per dozen \$ 0.05
Number Name of Part Price	3962. Driven fan pulley
3840. Rear spring hanger.       .15         3844. Rear spring perch bushing.       .05         3843. Rear spring perch.       .40	3964. Fan shaft
3845. Rear spring perch nut	3966B. Fan shaft
3847. Front spring retainer clip with bolt and nut	3967B. Fan bracket
3848. Rear spring retainer clip with bolt and nut10 3848B. Rear spring clip assemb., with bolt and nut10	3970. Fan grease cup
REAR SPRING, 60" TREAD.	
3850. Rear spring	4025
STARTING CRANK.	MUFFLER.
3900. Starting crank only	4025. Muffler assembly
3901.         Starting crank handle         .20           3902.         Starting crank handle bolt         .10	4052. Hood clip
3903. Starting crank sleeve.         .10           3905. Starting crank ratchet pin.         .05	CARBURETOR ATTACHMENTS.
3905 A. Starting crank ratchet pin, new style	4130. Carburetor flange bolt and nut
3908. Starting crank spring	
3923 3929 3931/2 2024	
3934	
	12.50
	4353
1=10	4350
	4351
RADIATOR, THERMO SYPHON.  3926. Radiator cap	WIRING. 4350. Spark plug wire
2929. Radiator stud and nut.         .08           3929B. Radiator stud and nut.         .08	4351. Spark plug wire (also magneto to coil)
3931½. Radiator stud washer nut03 3940. Outlet connection cock15	4355. Commutator wires with loom
<b>3944.</b> Outlet connection hose, 1\(^1\)\(x\)2\(^1\)4	5031. Commutator wire, spark type
3963	FORD SPARK COIL.
	4731. Switch plug
	4733. Vibrator with tungsten point
3960	5020. Key Bendix
3967 B 3967	5023.         Screw Bendix shaft spring.         .10           5024.         Screw Bendix head spring.         .05
RADIATOR FAN.	5025. Washer Bendix spring screw lock
<b>3960.</b> Fan and pulley assembly	EQUIPMENT TOOLS.  1349. Hub cap wrench
	Each

#### DUPLICATE REPAIR PARTS.

For Chevrolet 490 Model.

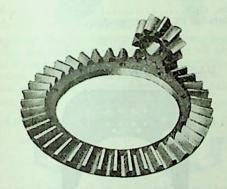
List N	0,	Each
H-181.	King Bolt	\$0.20
H-180.	Tie Rod Bolt	.15
H-343.	Adjusting Cones	.15
H-186.	Adjusting Cones	.15
H-190.	Stationary Cones	.15
H-378.	Inner Ball Cup	.15
H-382.	Outer Ball Cup	.10
H-379.	Inner Ball Retainer	.03
H-383.	Outer Ball Retainer	.02
H-192.	Spindle Washer	.02
H-183.	Steering Knuckle Bushing	.30
H-185.	Plain Arm Bushing	.05
	407 P. C.	

#### LIGHT-WEIGHT PISTONS FOR FORD CARS.



A Higher Grade Piston than those used on Ford Cars.

# RATIO GEARS FOR FORD CARS.



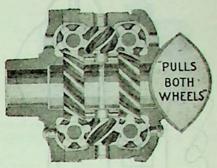
Ring Gear, 42 Teeth. Pinion Gear, 10 Teeth.

More Power for Commercial Cars.

Krom-Nik-Anderson Rolled Gears, 4.2-to-1 ratio, increase the power of the Ford Car almost 20 per cent, and are invaluable to the economical upkeep of the Ford Car used for commercial purposes. The type of tooth used on the Krom-Nik-Anderson Gears, as shown in the illustration, shows that the teeth are 40 per cent thicker, and that the thickest and strongest part of each tooth is at its base, where the greatest amount of strain lies on the gear.

Ratio 4.2-to-1.	Price,	each		.8253	\$12.00
Racing Ratio	Gear.	3.2-to-1.	Price, each	.8256	12.00

# POWERLOK DIFFERENTIALS. For Ford and 490 Chevrolet.



A positive pull on two wheels.

Power equalized on both wheels when car is turning. Impossible for one wheel to skid or spin in mud, holes or sand, when other rear wheel has traction.

Will prevent much of the skidding on wet streets.

#### BAILEY BALL THRUSTS.

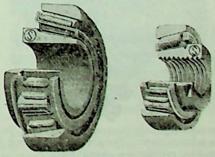


Replaces thrust washers at left (gear) side of Ford or Chevrolet 490 differentials.

The remedy for rear axle trouble.

The Bailey Ball Thrust Bearing will not wear and will keep gears in proper mesh, make them run smoothly and last indefinitely. Made to fit to a thousandth part of an inch, the Bailey Ball Thrust is an exact replacement and is made of the finest materials, carefully heat treated and ground, has eighteen ¼ inch balls of the highest grade and a capacity of six times the maximum thrust.

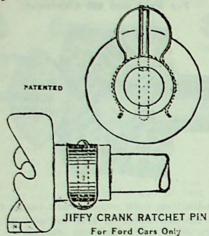
# ROLLER BEARINGS FOR FORD FRONT WHEELS.



Roller bearings are interchangeable with the ball bearings furnished in Chevrolet and Ford front hubs, without machining or fitting, and will absolutely eliminate your bearing troubles.

Simply remove the old bearings, and install the roller bearing, which will fit perfectly in the hub and on the axle shaft.

#### JIFFY CRANK RATCHET PINS.

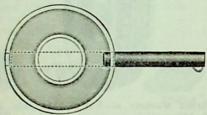


Requires no riveting; secures the crank ratchet pin on a Ford against displacement and provides means for replacing a lost or worn crank pin momentarily.

Price, each, in lots of 100...... 106

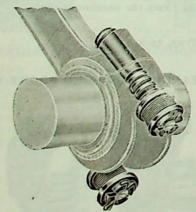
Display cards furnished of one dozen each.

#### STA-TITE CRANK SHAFT STARTING PINS.



Designed to take the place of No. 3040 Ford Crank Shaft Starting Pin. Can be put on in a few seconds. 

## KILNOCK BEARING ADJUSTERS.



Adjusts connecting rods automatically and permanently. Stop that knocking now. Positively no spring tension on bearing. Tension merely on spool nut.

Cars using 3/x21/s bolts. Ford, Saxon, Overland 4, Dort, Monroe, Oldsmobile, Grey, Jackson, Chevrolet, F. B., Elgin, Oakland, Scripps-Booth, Buick, Maxwell.

Cars using  $\frac{1}{2}$ " bolts. Dodge,  $\frac{1}{2}$ x $2\frac{3}{2}$ , Fordson Tractor,  $\frac{1}{2}$ x $2\frac{3}{8}$ ", Chevrolet 490,  $\frac{3}{8}$ x2. Price per set (8 bolts)......\$8.00

303 P. C.

#### HUDSON CRANK CASE REPAIR ARMS.



Fits both sides of all Ford passenger cars and Ford Trucks, with or without starter.

The old method of taking engine out of the chassis for a riveting or welding job done away with by this Arm. Simply loosen four bolts, slip Arm in place and tightén nuts. 

#### APCO CRANK CASE ARMS.

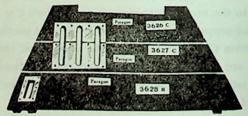


Can be put on in 10 minutes. Made from boiler plate steel carefully machined. Weight,

#### DASHES FOR FORD CARS.

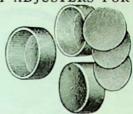


#### FLOOR BOARDS FOR FORD CARS.



Will fit Ford touring cars only. 

VALVE STEM ADJUSTERS FOR FORD CARS.



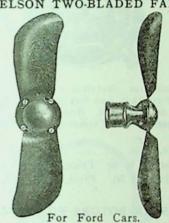
Consist of hardened steel caps, and a sufficient quantity of very thin hardened steel discs. To apply the Adjusters, all that is necessary is to raise the valve slightly, and slip cap onto end of valve stem. If not sufficient to take up play, put in discs.

RUBBER RADIATOR CAPS FOR FORD CARS.



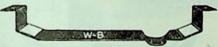
Dense black polished cap, rubber finish.

#### JUELSON TWO-BLADED FANS.



Concentrates the air currents. Is so constructed that the air currents are directed and driven over all of the surfaces of all the cylinders a shaft of swiftly moving cool air just wide enough to bathe completely the engine, keeping the motor and water cool under all climatic conditions.

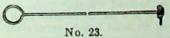
# RADIATOR SUPPORTS FOR FORD CARS.



Made of stamped steel, black enameled, and furnished with felt supporting rests. Supports the weight of radiator, and prevents the side lugs from breaking off.

Price, each ......206 \$0.75

# PET COCK OPENERS FOR FORD CARS.



The use of this article affords an easy method of opening oil-cocks without soiling hands or gloves, or injury to clothing from oil, dirt, etc. Also handy for measuring amount of gasoline in tank.

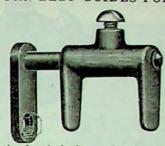
It can be very conveniently carried under seat cushion

and is thus available at all times.

Length, 21 inches. Weight, 6 ounces.

Price, each ...... 83 \$0.20 Price, per dozen ......756

NEVER SLIP FAN BELT GUIDES FOR FORD CARS.



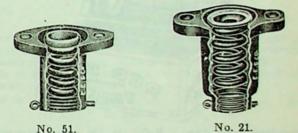
Will prevent the fan belt from slipping off the pulley and prevent overheating of the motor and probably serious trouble

#### CASCO FAN BELT GUIDES FOR FORD CARS.



Put on in a minute. Once on, never off. No cut belt, no run off.

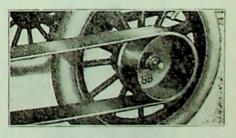
#### ANTI-RATTLING BALL SOCKETS FOR FORD CARS.



The rear ends of the radius rods on Ford cars form a ball joint, held by a solid cap. These Anti-Rattling Ball Sockets are made to replace the solid cap, and stops the rattle.

No. 51. For steering rod. Price, per pair.....253 \$0.40 

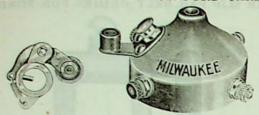
# B. B. AUTO POWER PULLEYS FOR FORD CARS.



Showing pulley attached to Rear Wheel of Automobile, belted, ready for work. A 5-inch crown-face belt pulley, 10 inches in diameter, designed so that it can be attached to either rear wheels of Ford car. Has two parts, the pulley and special hub cap for centering and holding the pulley on the wheel. The hub cap is also designed to be used as a wheel puller. It makes a regular power plant of your Ford, with power to run any machine on the farm. Weight, 20 pounds, net; crated for shipment, 29 pounds.

Price, each ......8506 \$11.00 

# MILWAUKEE TIMERS FOR FORD CARS.



Made of high-grade materials throughout, and carefully fitted and finished in every detail.

The case, which is a one-piece steel stamping, is nickelplated over a coat of copper, and is therefore rust-proof. It is fitted with an insulating ring of high-grade Egyptian bone fibre—extra wide and deep.

This timer excels in the method of imbedding the contacts in the fibre ring. The contacts are made of a good grade of cold rolled steel, and are welded to the screw studs, thus making a perfect joint. They are accurately machined to fit into machine-cut grooves in the fibre ring.

No. FT-18.—Milwaukee Ford Timer. Complete with terminal nuts and self-locking oil cup:

Price, each	\$2.25
Price, each, in lots of 10 or more	2.25
Brush assembly. Price, each	.70

#### RED STAR TIMERS FOR FORD CARS.



Standard rotor type. Roller is 100 points carbon steel ground concentric to .001 of an inch, and polished; even running roller that will not jump or chatter against the race Time-cured fibre is used in the race. Tested for hardness and toughness. Cannot pit or get bumpy. Never short. One dozen in colored display carton.

#### HY-POWER TIMERS FOR FORD CARS.

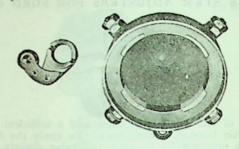


The Hy-Power Timer develops more power because of the instantaneous making and breaking of the circuit,

It develops more speed because it instantly breaks down oil film.

Price, each856	\$1.50
In lots 12 to 49. Price, each801	1.50
In lots, 50 or more. Price, each	1.50

### J. & B. TIMERS FOR FORD CARS.



Note simplicity of construction.

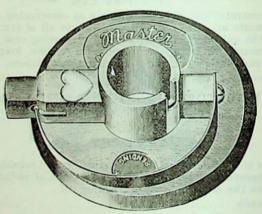
#### ANCO TIMERS FOR FORD CARS.



Gives its maximum electrical efficiency as long as any metal is left for contact, has but one moving part. Friction is all centered on the wipe. Brush brass shell, bright, well finished steel parts. Each timer packed in box. Ten to a carton.

Model F.	Price, each	\$2.50
Model F.	In lots 10 to 49. Price, each	2.50
Model F.	In lots of 50. Price, each	2.50

#### MASTER ROTORS FOR TIMERS.



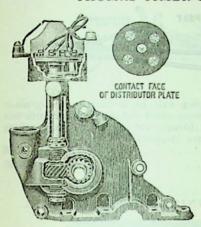
Will fit perfectly any Ford type timer shell. Makes starting in cold weather easy.

Holder for brush is a die casting of high grade hard white metal. Designed to hold brush accurately in place and to prevent oil from getting on raceway.

Spring is of the leaf type, punched from special spring bronze, giving uniform tension and brush wear.

Brush is made of genuine "Blendite" composed of pure copper, graphite, and two other metals thoroughly blended. It is tough and long lived; frictionless and gives a perfect contact.

#### THOMAS TIMER ELEVATORS.



Corrects all ignition trouble arising from the timer.

Will fit any Ford car -truck or tractor.

Lifts the timer up where you can get at it.

Price, each.....\$6.50

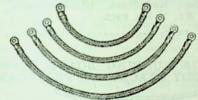
337 P. C.

In lots of 12, 351 and 54 P. C.

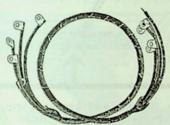
FORD CHOKER OR PRIMING WIRE.

No. 20 Gauge, in 1-lb. rolls. Price, per lb.......1503 \$2.25

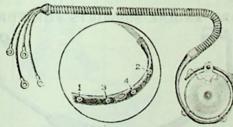
#### SPARK PLUG WIRES FOR FORD CARS.



#### WIRING ASSEMBLY FOR FORD CARS.



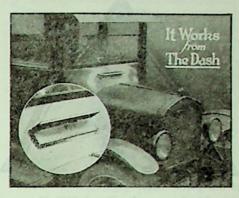
# POPULAR TIMER WIRE ASSEMBLY FOR FORD CARS.



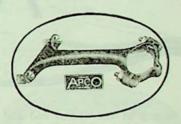
Fits any make of Ford timer of standard shape. A flexible oil and water-proof metal hose, encasing the four New Code insulated wires, and having the usual spark-coil terminals at one end. At the timer end the cords are enclosed in a fabric sleeve. Packed in box, with directions for installing. Ten in carton.

No. 200. With separate lighting wire. Each.........\$1.50

#### DeLUXE AIR VENTILATORS FOR FORD CARS.



#### APCO STEERING COLUMN BRACES.



For Ford Cars.

Fastened to the upper part of the dash at one end and to the steering column at the other, preventing all vibration and making the steering column as solid as a rock.

Made of malleable iron, black enameled. Furnished complete with bolts and nuts.

Packed in carton. Weight, 10 oz. Price, each......\$1.00

#### HUB CAPS FOR FORD CARS.

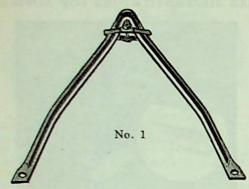


To replace dented hub caps. Will fit all models of Fords. No. 2819B. Price, each, Nickel 92 \$0.15
No. 2819. Price, each, Black 15

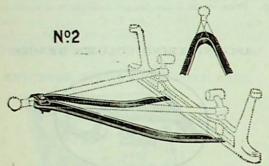


Dress up your Ford or Chevrolet car with a set of real hub caps. Made of extra heavy brass. Plated, with black enameled center. Four to the set.

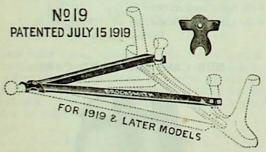
## FRONT AXLE BRACE AND RADIUS ROD SUPPORTS FOR FORD CARS.



Made of one-piece Tees. Finished in black enamel. Size 1x1x1/8 Tee. Packed 6 to the bundle. Wt., each, 5 lbs.

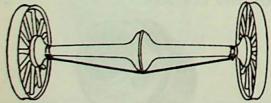


Fits in the crotch of the radius rod and there attached with a steel clamp. Made of lxlx1/8 Angle finished in black enamel.



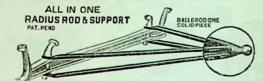
For Ford cars with new construction of the No. 2733B radius rod attaching underneath front axle. Fits directly in the crotch of the radius rod, and there attached with a malleable clamp. Black enamel. Packed 6 to the bundle. Made of one-piece 1x1x1/4 angle. Wt., complete, 5 lbs.

#### REAR AXLE BRACES FOR FORD CARS.



Ford Rear Axles are the weakest part on the car. This stay prevents the rear axle from spreading under a heavy load, saves time, and strengthens the weakest part, the differential. Makes your car run smoother, and saves differential trouble, such as noise, breaking and wearing on axles.

No.	12.	3/8-inch	Rod.	Price,	each558	\$0.90
No.	13	Te-inch	Rod	Price	each 602	1 00



Upper rod shorter, keeping axle at a correct angle, made from\*four pieces of Bessemer steel tubing, welded into one solid piece, the ball being forged out of the tubing, making an absolutely rigid one-piece support.

 Price, each
 .3753
 \$5.25

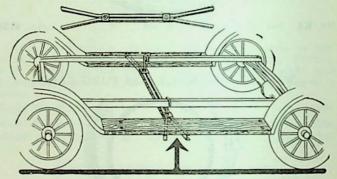
 Price, each, in lots of 6.
 .3506
 5.25

#### ANGLE IRON RUNNING BOARD SUPPORTS.



Keeps the fenders from vibrating, strengthening the running boards, and it makes the frame of the car carry the load of the running boards. Made of 1½x1½x1¾ Angle; hooks of ¾-inch Rod Steel. Black enamel. Packed 5 to the bundle. Wt., 10 lbs. each.

### PERFECTION RUNNING BOARD SUPPORTS AND BODY BRACES FOR FORD CARS.

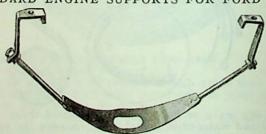


Prevents side swaying and broken springs. Stops rattle and noise. Prevents rear wheels from throwing grease. Strengthens the entire car, and makes a bumpy Ford ride smooth and straight

smooth and straight.

Made of 2 fifty-eight and one-half inch by three-eighths inch channel irons, with slightly upturned ends, which give the necessary mechanical strength. The boards that slip in under the regular running boards, are full length and width. Shipping weight, 17 lbs.

#### STANDARD ENGINE SUPPORTS FOR FORD CARS.



A permanent support for Ford Engines. Supports engine from the frame, independent of the breakable crank case arms. Relieves excessive strain at engine suspension joints, where vibration and jars and jolts pass to the car frame. Drop forged supports, pressed steel saddle.

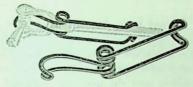
## LITTLE GIANT SILENCERS AND BRACES FOR AUTO STEERING RODS.



Keeps the front wheels in perfect alignment. Made from the highest quality of oil-tempered spring steel. Holds all rods, knuckles and joints rigid at all times.

Fit Ford, Dodge, Maxwell and many other makes of cars. Weight, 5 ounces.

#### FERNALD LITTLE B-R-A-T-S.



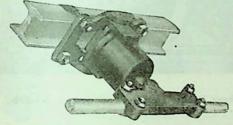
These "sassy" little chaps grip the brake rod couplings tight, and choke the rattles into everlasting sleep. No trick at all to put 'em on.

Two B-R-A-T-S are used on each brake rod. At rear of rod, one end of the B-R-A-T slips over hub brake expander lever, and the other over rod. At front, one end slips over brake shift lever, the other over rod.

Each B-R-A-T is made of strong tempered steel wire, with baked Japan finish. One set will keep the rattles out of any Ford for its life-time.

Little B-R-A-T-S come in sets of four, in snappy-looking paper cartons, packed one dozen cartons to the box.

#### HASTING'S STABILIZERS FOR FORD CARS.

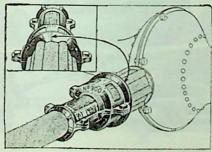


For safe and steady steering.

Automatically centers front wheels when deflected, and makes them track properly with those in rear. Takes up all lost motion or looseness of steering parts, preventing noise and rattle.

Price, each ......2506 \$3.75

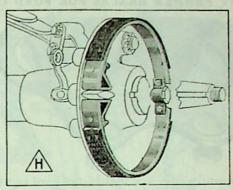
#### DRIVE SHAFT TUBE SUPPORT CLAMPS.



For Ford Cars.

A quick and permanent repair of broken drive shaft tubes, complete with bolts, ready to apply. Made of malleable iron, with black enamel finish. Packed one set in carton. Weight, 4 pounds.

#### HUMBOLDT PRESSED STEEL BRAKE SHOES.



For Ford Cars.

Fills the long-felt want for an effective brake. Made in one piece, from the best grade of steel, uniformly perfect. Cannot break, slip, or warp, and lining can be replaced in a few minutes when worn. Will last 10,000 to 25,000 miles on the original set of lining. Fits all Fords. Gives unqualified satisfaction. Packed in crates containing 24 sets ready for shipment. (Each set packed in individual box.)

## RUSCO COMPLETE EMERGENCY BRAKE SETS FOR FORD CARS.



Made in two parts, and can be quickly attached to the car. Lined with Rusco Wire Woven Asbestos Brake Lining, and will fit all models of Ford cars.

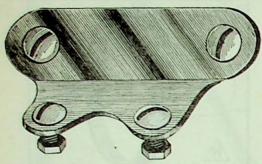
#### HOLD-TITE BRAKE SHOES FOR FORD CARS.



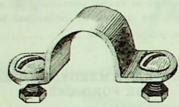
The strong semi-elliptical spring welded into the casting, when it is made, replaces the troublesome coil springs used in other makes. Castings are heavier and will wear longer. Ground perfectly round to an exact diameter. Split at the bolt hole, relieving the strain at this point. They are self-adjusting. Standard package, 20 pair to the crate. Each pair packed in separate carton.

Price, 1	per	pair,	10 pair	lots	 559	1.00

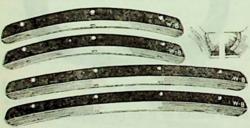
#### FRONT FENDER BRACES FOR FORD CARS.



#### REAR FENDER BRACES FOR FORD CARS.

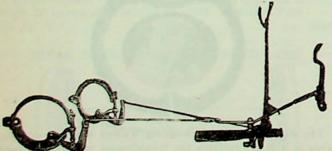


#### FENDER BRACES FOR FORD CARS.



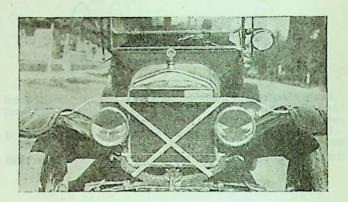
No. 6.

#### A-C EXTERNAL BRAKES FOR FORD CARS.



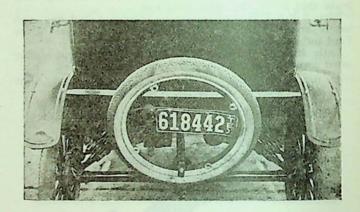
154 P. C., Plus 5% War Tax.

#### WICHITA FENDER BRACES FOR FORD CARS.

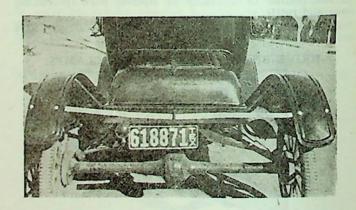


Front Brace for All Models.

Eliminates the constant rattle and vibrations of fenders. The position of fenders always remain the same as when braces are applied, and do not sag and get out of line. The front brace serves as a protector for the radiator.



Rear Brace Touring and Sedan Models.



Rear Brace for Roadster or Coupe Models.

Front Brace.	Price, each\$5.00	0
	Price, each	

201 P. C Lots of 6 253 P. C. Lots of 12 308 P. C.

#### SHURNUFF GREASE RETAINERS FOR FORD CARS.



The Shurnuff Grease Retainer consist of four specially treated felt washers, a cold drawn steel cup, and a retaining ring. The Shurnuff Grease Retainer remains stationary, the two rivets in present axle housing keeping it from turning, and it does not cause wear on the axle.

 Price, per pair.
 651
 \$ 1.00

 Price, per dozen pairs.
 .7200
 10.80

#### EMCO GREASE RETAINERS.



Two centrifugal coiled springs, that cure a great evil. They keep oil and grease from dripping out of axle ends. There is a type for every make of car.



#### OIL GAUGES FOR FORD CARS.

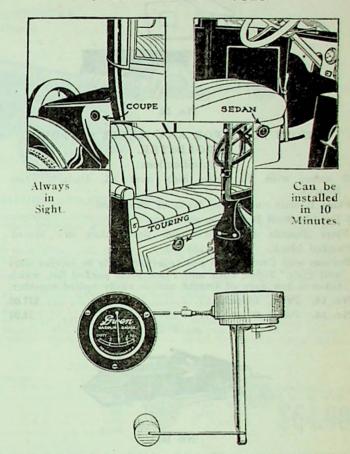
Takes the place of the lower pet-cock on the transmission case, and shows at a glance how much oil is in the car.

Can be put on your car in less than ten minutes with a pair of pliers.

It will save its cost in oil the first month.

Price,	each		 		 	204	\$0.75
Price.	per	dozen	 			2006	8.00

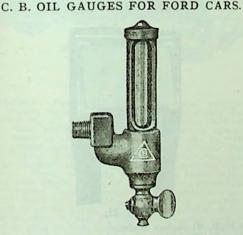
#### GWEN GASOLINE GAUGES.



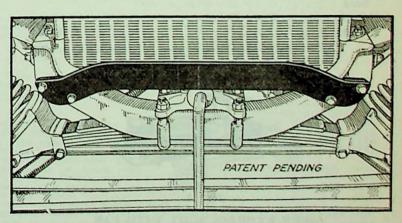
Made for all models of Ford and 490 Touring Chevrolet Will not rust or deteriorate from use. Attractive and dependable.

The Ford Coupe, with tank under rear deck, has gauge installed on right-hand side of body. In the Sedan the gauge is mounted on the right-hand side of driver's seat and all models with tank under seat the gauge is mounted on the heel-board.

#### D. & L. FRONT SUB CROSS MEMBERS FOR FORDS.



Solid construction. Efficient and reliable. It has a natural downward channel of large diameter, which positively eliminates clogging, and, being of solid construction, it can not come apart from vibration.



Will prevent the front cross member on a Ford car or truck from breaking, will also hold broken cross member in place for life of car. A protection to the base of the radiator in case of collision. Can be installed in 15 minutes. Complete, ready for installing.

Price, each	\$2.50
In lots 6 to 11. Price, each	2.50
In lots of 12. Price, each	2.50

EXPRESS BODIES FOR FORD CARS.



No. 14.

#### SLIP-ON BODY FOR ANY MODEL "T" FORD ROADSTER.

Specifications:

33 inches wide, 12 inches high over all, 41/2-inch Flare

Flare Boards and Cross Rails of hardwood.

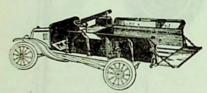
3 Double Steel Braces on each side.

Flare Boards will not mash down-they are braced. Painted black. Weight, 115 lbs.

Bottom and Cross Rails put together ready to receive sides and ends. Sides, ends and Flare Rails packed flat, which takes a low rate of freight and is easily bolted together.

No. 14. Price, 48-inch.....\$17.00 

404 P C.



#### EXPRESS BODY FOR ANY MODEL "T" FORD CAR. Specifications:

Loading space—43x63 inches. 15 inches high over all, Flare Boards and Cross Rails of hardwood. Balance of body selected material. Body throughout is well ironed. Flare Boards and Bottom stripped with ware plates. Chain end gate adjustable to any load.

Weight crated for shipment, 375 lbs.

Painted black.

Base is put together ready to receive sides and ends, which are packed flat to insure a low rate of freight. Easily

Furnished complete with foot boards and full length lazy back.

Note bracing on Flare Board.

No. 15. Price ...... \$53.00 Cushion extra..... 6.00 Dash not included in this equipment.

353 P. C.



No. 19.

#### OPEN EXPRESS BODY WITH CAB.

Same Specifications as No. 15 Except Cab.

Deck of cab covered with oil drill, has hardwood posts and substantially bolted together. Painted black. Shipping weight, 450 lbs.

No. 19. Price, each.....\$66.00 Cushion extra..... 5.00 307 P. C.

#### COVERED EXPRESS BODY FOR ANY MODEL "T" FORD CAR.

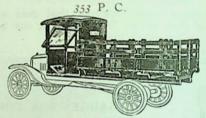
Same Specifications as No. 15, Except Top. This top has six hardwood posts furnished with Steel Braces bracing it both ways, which insures a rigid job.

Top deck covered with black oil drill.

This body furnished with 5 curtains. One small curtain on each side of the driver's seat with celluloid lights. Two full length side curtains, and one rear curtain with celluloid light. All curtains black oiled drill, furnished with straps and buttons for fastening to flare boards and end gate. Shipping weight, 500 lbs.

#### Price:

No. 18. Body complete without windshield .......\$100.00 Windshield extra..... 32.00 Cushion extra....



No. 20.

#### PLATFORM STAKE BODY FOR FORD TRUCKS. Specifications:

Loading space, 60x90 inches. All framing of hardwood. Well ironed and well bolted to longitudinal sills. Ware strips on platform. Stake Panels can be removed for use as platform truck body. Glass both sides and rear of cab.

Shipping weight, 900 lbs.

Shipped-One coat priming only, unless otherwise ordered. No. 20. Price complete, except windshield......\$160.00 Windshield extra.... Cushion extra..... 6.00 If wanted fully painted black...... 190.00 406 and 52 P. C.

#### EXPRESS WINDSHIELDS.

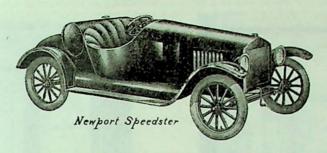


No. 21.

54 inches high, 40 inches wide. Glass-Size, 20x32 inches. Fits either 18-19 or 20 Express Bodies. Made of hardwood and well ironed. Adjustable sash. Weight crated, 90 lbs. No. 21. Price each.....\$32.00

507 P. C.

#### (F) NEWPORT SPEEDSTER On Ford Chassis



#### PUTS SPEED AND JOY OF DRIVING INTO OLD FORDS

For fast road work, low rakish appearance, comfortable rid-ing and sturdy construction, the Newport Speedster gives won-derful value.

In ordering, state color of body and whether your radiator is new style or old style. state color

Specifications: Body, 22-gauge cold-rolled automobile steel, with substantial wood frame. Finish, glossy Sunset Red or Atlantic Green. Other colors, if desired, at slight added cost. Seat, back-tilted and softly padded; cushion built with spiral steel springs padded. Upholstery, high grade imitation leather fabric, French plaited. Frame, well built of auto body lumber; ash sill; hardwood support carries steering post in its lowered position. Floor, complete over entire body, rabbetted into sills. Metal wear-plates installed on pedal and brake lever openings. Hood and Shell, made of cold-rolled automobile steel; ventilating louvres decorate both sides of hood and enhance air circulation. Gasoline tank, 12-inch large capacity. Radiator, Fenders, Dash, Body Brackets not furnished. The body is easily attached and is so constructed that it will fit the Ford chassis perfectly and securely, using your fenders, running boards, dash and radiator. Holes bored in sills to bolt directly to regular Ford chassis body brackets. Dimensions: Length, 119 inches; from dash to back of seat, 54 inches; height of cowl from floor, 25 inches; height of back, 23 inches; width of seat, 35 inches. Battery: Floor opening provided to give access to battery, which must be relocated in rear of chassis. Freight: Body packed by nesting two sections together in one crate; should take knocked-down classification. Shipping weight, about 325 lbs.

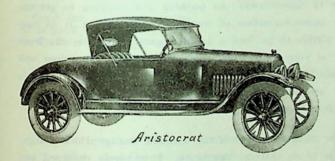
EXTRAS.	List Prices
Windshield, one-piece clear-vision, ventilating type; glass set in rubber	\$15.00
Special Finishes: Azure Blue, Dark Blue, Yellow or Black finish, extra	
Dunham Linoleum-covered metal-bound running boards, pair	5.00
Dunham Individual Fenders, Aprons and Dust Shields	29.00
Dunham Individual Steps, each	
Carrier for spare wheel or tire, on left side of body, each	
Top, Bow-and-socket style or Military style, with curtains	35.00

For Ford, complete as described and illustrated, with shell and hood, without top and windshield. List price F. O. B. Aurora,

DUNHAM UNDERSLUNG PARTS chassis.

For Chevrolet-490, without shell, ith hood to fit your Chevrolet adiator \$30 extra

#### STAUNCH, ELEGANT BODIES FOR FORDS AND CHEVROLETS



#### (F) ARISTOCRAT

An unusually high grade body that, because of its distinctive type of construction, provides space and comfort equal to the most luxurious car made—and has the impressive appearance of a large roadster. Equipped with round shell and hood, one-piece windshield and one large door with ventilating bracket.

Door on right side.

As handsome as any of its kind. Built of the very best materials, carefully selected, substantially assembled, perfectly and firmly fitted together.

In ordering state color of body and whether radiator is new style or old style

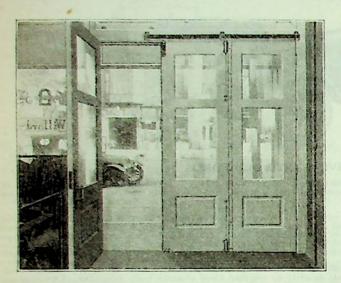
Makes the Ford a magnificent roadster. Roomy-comfortable-im-

For Ford, complete as described and illustrated, with shell and hood, top and windshield. List price, F. O. B. Aurora.

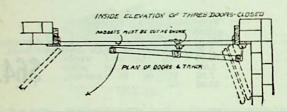
Specifications: Body, 22 gauge cold rolled automobile steel, with hardwood and steel reinforced frame; seams concealed. Finish, glossy Sunset Red or Atlantic Green, Other colors, if desired, at slight extra cost. Seat, back-tilted and softly padded; cushion built with spiral steel springs padded. Commodious space gives ample seat room and convenient leg room to enable persons of any size to ride and drive with perfect ease. Upholstery, high grade imitation leather fabric, French plaited. Windshield, one-piece, clear-vision, ventilating type, with rubber weather-flap; glass set in rubber. Frame, well built of auto body lumber, ash sill 6x2 inches; hardwood support carries steering post in its low-red position. Floor, complete as described and illustrated, with shell and hood, to part with shell and hood. The part with shell and hood with shell and hood. The part with shell and hood to part with shell and hood. The part with shell and hood to part with shell and hood. The part with p

263 P. C. F. O. B. factory in Illinois.

#### SLIDETITE GARAGE DOOR ROLLER BEARING LOUDEN IDEAL DOOR HANGERS. HANGERS.



Slidetite 3-door Hardware. Interior of Garage.



Inside Elevation of Three Doors Showing the Hardware.

#### A 3-DOOR SET CONSISTS OF THE FOLLOWING:

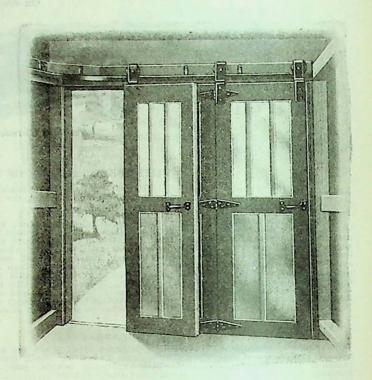
- 1 R-W No. 435 Hanger.
- 1 R-W No. 435-C Center Bracket.
- 1 R-W No. 435-E End Bracket.
- 1 R-W No. 435-I Intermediate Bracket.
- 3 pairs R-W No. 435 Japanned Butt Hinges.
- 11/2 pr. R-W No. 435 Japanned Surface Hinges.
- 7 feet R-W No. 31 Track (1-7 ft.).
- 1 R-W No. 71-2 Bow Handle.
- 1 R-W No. 271 Center Guide
- 2 R-W No. 301-72 Bumper Shoes.
- 2 R-W No. 514 Top and Bottom Bolts.

Note Lock on swinging door not furnished.

Directions for Ordering-State width and height of opening and thickness of doors. Do not use the 3-door set on opening over 9 feet wide. Unless otherwise specified, fixtures complete with No. 514 Top and Bottom Bolts will be sent.

#### R-W No. 435.

Shipping weight, Slidetite 3-door set, complete, as above Shipping weight of No. 31 Track for 3-door set, One set Slidetite 3-door Hardware, complete, as above 



#### MOST CONVENIENT HANGER FOR ANY GARAGE DOOR.

In the winter, when the snow is deep and drifted against the garage doors, it is a tedious job to open up the ordinary folding doors which fold together on the outside. Then is when the Louden hung door can be fully appreciated-no snow to shovel away-no pushing and tugging to get the door open-regardless of weather conditions, it is as easy and simple to go into a Louden garage as it is the front door of your house-just open the swinging foot-door and go in. If it is desired to take out the car, pull the whole door around the inside corner. Nothing could be more simple or convenient.

The inexpensiveness of the Louden Garage Door Hanger is due to its extreme simplicity. It is nicely designed and neat in appearance, but nothing is added merely for decoration. The parts are few, and there is no complicated mechanism to get out of order. It is built for service.

Track, hangers, hinges, stay rollers, door handles, all the hardware complete, including screws and nails, packed complete, with directions in box. Track comes in plainly labeled bundle.

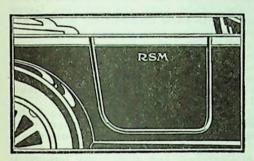
Fig. 1273.	Per set, 6-fc	oot door	\$5.40
Fig. 1273	Per set, 8-fc	oot door	5.60
Fig. 1273.	Per set, 10-fe	oot door	6.00
Fig. 1273.	Per set, 12-fe	oot door	6.40

#### MAGIC INITIAL TRANSFER LETTERS.

For Automobiles, Motorcycles, Bicycles, Trunks, Grips, Etc.

Every Dealer and Garage should have this equipment. More than ever is the need of initialing cars. Standard makes all look alike, and owners realize the importance of identification as well as the added appearance it makes to their machine. Our Transfer Letters go on quickly—no experience necessary—as letters line and space automatically, and all necessary

equipment, directions, etc., furnished with each outfit.



#### DEALERS' OUTFITS.

Each outfit contains but one style, has 270 letters, approximately ten alphabets, assorted to give you the advantage of the most used letters.

Felt roller, cement and brush for applying furnished with each box.

Full directions for applying in cover of every outfit.



Dealers' Outfit, Price, \$6.00.

#### DEALERS' PROFITS.

There is a good profit awaiting the dealer who will put forth some effort on this line.

#### RETAIL PRICE 25c Per Letter.

Six letters to a car means \$1.50 for the job.

Your cost is 3 cents per letter, or 18 cents plus 15 minutes' time.

Hundreds of owners want their cars initialed. Nearly every new car that is sold can be initialed if it was suggested to the owner.

Some dealers offer this as a courtesy when selling new cars, and they do not hesitate to tell us that it helps to sell cars. An 18 cents courtesy compared to the price of an automobile, is a small matter.

The choice of policy is yours.

Send for an outfit today. It is good as long as you are in the automobile business.







Fancy Roman.

How to Monogram Automobiles.

The usual place is on the rear door, although some prefer the panel between the doors. Our letters line and space automatically, so by placing middle letter on first (your eye will center it), the first and last letters join easily, so that even a novice can handle it quickly and neatly.

No. 1.—3%-inch Roman Gold.
No. 2.—3%-inch Roman White.
No. 3.—5%-inch Old English White.
No. 4.—34-inch Fancy Roman Gold.
No. 5.—34-inch Plain Roman Gold.
No. 6.—34-inch Old English Gold.

Complete Outfits.	Each6001	\$6.00
	Each 34	.03

#### SERVICE.

To dealers having our outfits, we supply additional letters at 3 cents each.

#### STYLES.

The styles shown are those in favor with both owner and manufacturers.

While some dealers carry all of our styles, others confine their efforts to one or two, gauging their investment by the amount of work they do.

Special monograms are sometimes desired, but must be done by hand, as no two are alike. Work of this nature is easily discouraged, as they are usually unreadable.

#### AUTOMOBILE BLUE BOOKS.

### Brand New for 1922

Twice or three times the territory in each volume—at same price

# The Automobile Blue Book

The Complete Guide for Motor Touring

Four Volumes for entire country—each a complete guide for the section it covers.





New York and New England Automobile Blue Book (Volume 1). Complete touring data on 65,000 miles of automobile roads in New York State, Conn., Mass., N. H., R. I., Vt., Me., Que., Ont. and Maritime Provinces of Canada.

Middle Atlantic and Southeastern Automobile Blue Book (Volume 2). Complete touring data on 85,000 miles of automobile roads in Pa., N. J., Del., Md., Va., W. Va., D. C., Tenn., N. C., S. C., Miss., Ala., Ga., Fla. and Eastern La.

Middle Western Automobile Blue Book (Volume 3). Complete touring data on 125,000 miles of automobile roads in Mich., Ohio, Ky., Ind., Ill., Mo., Iowa, Wis. and Minn.

#### THE OFFICE RECORD FOR'M 300.

The only way you can fully know your business is to ascertain FACTS by use of the proper tags and forms, and then to keep a summary of those facts in a proper set of books.

And here Comfort again comes to the rescue of the retail automobile man.

A set of books is a necessity.

But a complicated bookkeeping system is NOT a necessity.
The Comfort Simplified Bookkeeping System is the result of several years of work.

In this system we have cut out every unnecessary operation. We have eliminated the technical features of bookkeeping. We have devised a simple system not for the use of any business—but for the use of the retail automobile men alone.

Because this system has been devised for just a special use, it is a system void of technicalities—a system of maximum effectiveness, requiring a minimum of time and attention.

Only two books are required; a bound book and a looseleaf book.

The person who knows nothing at all about bookkeeping will find no trouble in using this simple, yet effective system.

The experienced bookkeeper will find the system a refreshing change; with its short cuts and freedom from complicated accounting. The Bound Book is a three-column cash book with 150 pages, made of good paper and bound in heavy board.

The ledger is of standard size, 9\(^4\x\)11\(^7\star\)8, with heavy cover of corduroy with leather corners and locked with a key. It is divided into five divisions.

Number one is a customer's ledger and has an alphabetic index.

Division Number 2 is the general ledger, divided into the following departments: Tires and Tubes, Repairs, Parts, Accessories, New Cars, Used Cars, Oil and Gas, Garage Storage, and Expenses. All these divisions are indexed with heavy sheets containing leather tabs, printed in gold.

Division Number 3 is record of purchases.

Division Number 4 is record of sales.

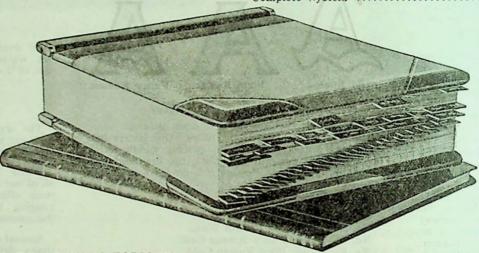
Division Number 5 is record of pay roll. Each consists of thirty sheets of record of purchases printed on both sides—thirty sheets record of sales printed on both sides—thirty sheets of pay roll printed on both sides.

Customers' ledger, which is indexed from A to Z, has approximately 150 ledger sheets. The general ledger, which is indexed, has sufficient sheets to warrant its use to you for the year.

This quantity of sheets will last almost any business at least a year. Additional sheets can be purchased in any quantity at any time.

THE PRICE.

Complete System .....\$25.0



#### THE SUMMARY OF SALES FORM 301.

This form is a combination of Summary of Sales and distribution by departments. The Summary of Sales is divided into two departments; namely, Cash sales and Charge sales; while the distribution of sales has been divided into ten departments, as shown in illustration, which will fill the needs of any size garage.

This form also acts as a register for your invoices, which

are rendered in any department.

It gives you a total of the amount of sales in each department each day. This form is also a safeguard against transpositions, etc., and it can be balanced by footing the columns of the various departments, the total of which must agree,

with the grand total of the charge sales and the cash sales.
You do not need any expert bookkeepers to keep this

It acts as a journal and you post the accounts to your customer's ledger, from the charge sales column.

There are thirty sheets of Form 301, in our office record system, which is printed on both sides and in blue ink on good ledger paper. This is sufficient for an average size garage for about one year's supply.

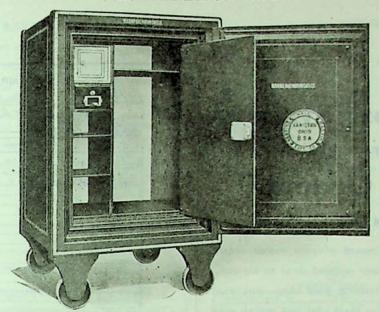
THE PRICES.

.....\$1.00 50.......\$1.50 100......\$2.50

Full Size of Each Sheet, 91/4" High x 117/8" Long.

SUMMARY				Marie .	OF SALES							-			
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(F) HOWE FIREPROOF SAFES.



#### YALE COMBINATION LOCK.

Heavy steel hoops solidly welded at all corners and at the joints, and these are securely riveted to a continuous, plate of steel that forms the body of the safe. The doors are all of tongue and groove type, not only provided at the rear with dead bolts, but have a flange running the full height of door that interlocks behind the steel hoop or frame.

No. 2 Safe.	Height	Width	Depth
Outside	261/4"	18"	18"
Inside	131/2"	10"	10"
Approximate	Weight, 425	i lbs.	
1 Cash Box, 4"x4½". 1		er, 3"x4".	1 Pigeon
Hole, 4"x5". 1 Book Space			
No. 2. Price, each		270	03 \$45.00
No. 3 Safe.	Height	Width	Depth
Outside	291/2"	18"	201/2"
Inside	151/4"	101/4"	11"
Approximate	Weight, 550	lbs.	

1 Cash Box, 5"x4". 1 Knob Drawer, 3"x4". 2 Pigeon Holes, 31/4"x4". 1 Book Space, 15"x53/4".

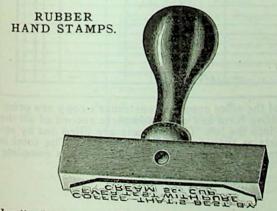
Fireproofing, only the best material is used.

Cabinets are all made of steel; the drawers of wood. Air space between safe wall and cabinet insures dryness. Safes handsomely finished in black, rubbed to a smooth surface; ornamented and varnished. Locking bolts, hinge tips and handles heavily nickel plated. Lock dial in black and white

finish.			
No. 4 Safe.	Height	Width	Depth
Outside	331/4"	221/2"	22"
Outside	181/4"	141/2"	13"
Approxi	mate Weight, 800	lbs.	
1 Cash Box, 5"x5".	1 Knob Drawer,	3"x5". 2	Pigeon
Holes, 5"x5". 1 Book	Space, 181/4"x91/s".		
No. 4. Price, each		45606	\$73.00
No. 5 Safe.	Height	Width	Depth
Outside	34½"	23"	22"
Inside	20"	151/4"	13"
Approxi	mate Weight, 850	lbs.	
1 Cash Box, 5"x5".	1 Lock Drawer	, 3"x5". 1	Knob
Drawer, 3"x5". 2 Pig	geon Holes, 4"x5".	· 1 Book	Space.
20"x93/4".			
No. 5. Price, each No. 6 Safe.		51600	\$85.00
No. 6 Safe.	Height	Width	Depth
Outside	361/2"	241/2"	23"
Inside	22"	161/2"	14"
	nate Weight, 1,000		
1 Cash Box, 5"x5".			Knob
Drawer, 3"x5". 2 Pige			
31/6"x51/9". 1 Book Spa			

No. 6. Price, each ......57608

F. O. B. Factory in Ohio. • Goods marked (F) not carried in stock. Shipment from factory.



THE BEST BY	
Handle Stamps: 1st line	\$0.30
Park atting the state of the st	20
Each additional line within 3 inches in length	
Per line extra for each inch over 3 inches	.10
With cushions, per line extra	10
with cushions, per line extra	

#### STAMP PADS.



Colors brightest, best and most lasting. Red, Carmine, Violet, Blue, Green, and Black.

_					
No. 0.	21/4 x31/2	inches.	Price,	each	\$0.40
No. 1.	2¾x4½	inches.	Price,	each	.50
No. 2.	31/2×61/4	inches.	Price,	each	.70
			Marl	ket.	

# The Comfort Systems

-OF-

## Repair Orders

FORM 100.

You can have a complete record of your repair orders, showing just what your customer ordered done to his car—just how much time the job took in your shop—just what parts were used on the job—the total cost and selling price of these parts. Your customer can have a complete record of his order as well as the time and parts put in on it.

With this, you will be able to give better service and handle your work with less bother and trouble and less expense than you are having with your work at the present time.

You realize how many small repair jobs go through your shop that you do not get paid for and that you do not charge enough for. The use of these orders will stop many a leak that is taking away your profits at the present time.

You will find at the end of the year you will make more money on your repair work than you have been doing. You will be more free to enjoy yourself and you will get some real pleasure out of your business.

The repair orders are 9x8, gathered together in triplicate, complete with carbon sheets. A set of instructions is sent with each order.

100\$ 3.00	1,000
250 6.00	2,500 40.00
500	5,000 72.00

Printing Name and Address on Original and Duplicate Sheets, \$3.00 per thousand sets extra.

Numbering all three sheets, \$2.25 per thousand sets.

	REPAIR ORDER NO	489 11 :02
	CHAPCE Self DEEMSE NO. 44.  #13 Drend Valves  #27 Pet on James Marce (base & Polle of needs	250
07101 0071	Hash Car	100
	TOTAL LABOR ONLY BATERIAL TOTAL AMOUNT	5 00 10 55 15 55
	May 14 7 mens Fred a Mills	a miller

The first sheet is the office copy. It is on white paper, printed on two sides. The repair order is written on it.

The second sheet is the invoice or customer's copy. It is a yellow sheet, printed on two sides. The copy for this sheet is made with a carbon placed under the office copy.

The third is the instruction card. It is printed on one side. This copy is made with a carbon placed under the invoice. Cardboard is used to stand the wear of the repair shop.

-	=	MINOLE	-	-	-	-	P4.87	AFFICIA	-	COST
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11	322/	Com. Case	1 80							
11	43:55	Thire	1 6	5						
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11	3002	basket	1 4	1						
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-	-		1	1	-	-	-		1-	1
		TOTAL	105	1	+		-	TOTAL	1	1

The backs of the office copy and customer's copy are printed with the above form and are a complete record of all the parts that go into the job. These sheets are filled out by entering the parts as they are used on the job. The total is entered on the front of each sheet when the job is complete.

#### THE TRIPLICATE REPAIR TAG FORM 41.

It is printed on both sides similar to our Form 40. The added feature is the office check, which gives a record for your Accounting Department to post the charges, etc.

The office check is 3x5, and can be filed in a standard No. 35 file and used for accounting records by filing them alphabetically. On the back of the office check there is a clause which protects you on the payment of your bill.

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Printing Name and Address on the claim check, \$2.50 per thousand extra. If less than 1,000 are ordered the price will be the same.

FORM 41
REPAIR TAG No. 4 670
MAKE OF CAR STYLE OF CAR NO. OF CTURDEAS
Dodge Truck 4 LICENSONUMER MOTOR NO. DATE 328642 682145 1-18-20
REPAIRS WANTED
Adjust Trans Renda
Install new Imergency Brate Shoes
Adjust Trans Rando Install new Imergency Brate Shoes Mater Steelights Burn Polish with lamp Black
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tolate and a second
DATE PROMISED FINE EMPLOYEE
1-20 9 84
PHONE WHEN READY NO PHONE NO. Bell 496
or larle Hilson DATE 1/70 102.0
NOTE: SEE THAT INSTRUCTIONS ARE CLEAR AND PERFECTLY UNDERSTOOS WRITT INSTRUCTIONS FULLY. HAVE THIS TOS BOILE WHITH THE CAS IS LETT FOR REPAIRS AND WHEN IT IS DELLYTED TO OWNER. PLAYER ALL PLAYS AND THE ON OTHER BIRE.
OFFICE CHECK REPAIRS No. 4 670
1 HEREBY AUTHORIZE THE ABOVE REPAIRS SUBJECT TO CONDITIONS ON THE BACK OF THIS CHECK.
SIGNED BY Carle Hilan
ADDRESS 746 East Maple
LICENSE NO. 378642 SUL MOTOR NO. 687145
DATE LETT 1-18 EMPLOYEE 21.
CHARGES \$ 9. 55
DATE PAID 1- 70
AUTOMOBILE REPAIR CHECK No. A 670  PRESENT THIS CHECK WHEN CALLING FOR CAR
DATE PROMISED TIME EMPLOYEE
1-70 9 ALL REPAIRS ARE CASH
NOT RESPONSIBLE FOR LOSS BY FIRE OR THEFT.
COMPORT PRINTING SPECIALTY CO. ST. LOUS, MO. ALL RIGHTS RESERVED.

		100	6	1				1
			(0					
	PARTS NO.		ARTS	TICLE	D	-	-	
	9171		00.0	3.11	-			40
2	7566	But	a 4	loes				70
2	7561	Ball	6+n	nto				20
1	65850	Refl	ctos	_				20
1_		Clan	urt	Les	ny			00
			-			- 1		
-	-			-				-
-	-	-	-	-	-	-		
-					-			
					1			
				_	TAL PA	RTS	3	50
	DESCRIP	TION OF W	LAB		HOURS	-are l	****	27
00	ano 6	B. L		1			-	
1 Re	tu s	Charen						
N	alligh	16.		-	-			-
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	22			E	PARTS (	CHAR		
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			- V					
	CONDI							
1	This Labor have authorices. I a or on satisf	and Ma	terial is o	rdered be list	by me	e, for v	rhich	
	prices. I a	gree to p	ay, cash v	ben v	work is	compl	eted,	
	hall consti	tute a lie	n on this a	utomo	bile.			
	f collection nterest un reasonable to claim ex	til paid,	also colle	ection	costs,	includi	pg a	
	o claim ex	emption	under the	State I	Laws	-	-	
.38								

Front.

Full Size, 5x13.

Back.

#### THE TIRE REPAIR TAGS FORM 22.

These Tags are printed on one side in black ink, and numbered in red ink. They are used whenever a casing or tube, is left to be repaired. The Claim Check is given to customer to present when calling for his casing or tube. Form 22 as an office check, which is used to keep the record in the office. The top part is tied onto the casing or tube and stays on until it is delivered to the customer.

1	5	1	\
FORM 22		Number	)
To be Tied on Casing or Tube	A .	423	3
TIRE REF	PAIR		
. a a -	Hood	0	
MAKE	BIZE	21/ C	ASING
Miller	30 X 3	ROMISE	D
4/19 A.M.	4/2	,	P.M.
CHARGES		977	
Vulcanizing	-	578	1
Tube Repair		2	75
Casing Repair Tire Change	100	-	/-
Material		100	
11-31	-	100	
		-	
	Total	1 2	78
Employee Jone			
Office Check		The state of the s	oair
Date 4/19 1919		23	
Address Ca.	Tood		
	rood		0.
Miller	30 X	3/2-	ASING
H21 P.M.	5	PLOYEL	
TIRE TAGTURNED.	CHAR	GES PAI	D
IN TO CASHIER V	1 . 4.	13	
Present this Check Whe	n calling for	Tire or T	ube
Tire Glaim Check		123	
PROMISED	(LM)	PLOYEE	
ALL CHARG	ES C.	0. D.	
Not Responsible for Work not called for in 30 c	Loss by Fire	or Theff	hargee
	-	-	HPMED .

Full Size, 3" Wide x 9" High. Form 22.

#### THE PRICES.

100\$	1.25
250	2.50
500	4.50
1,000	7.50
2,500	15.00
5,000	25.00

Printing Name and Address on Claim Checks, \$1.50 per 1.000 extra. If less than 1,000 are ordered the cost will be \$1.50.

THE GARAGE STORAGE TAG FORM 16.

The top of the tag is to be tied on the car and has a space for customer's name, make of car, license number, etc. It also keeps a detail record of the charges on the car.

The office check also has space for the customer's name and address, make of car, license number, etc., and has a space to check, showing that the part tied on the car was turned into the office and also to show that the total charges were paid.

The claim check, which is given to the customer, has space for the time the car is promised, and the name of the employe receiving the car, so that the customer can get immediate service upon presenting the claim check.

		1	1	
	/ (	)		1
1	FORM 16 To be Tied		Number	1
	on Car	A_	<u> 265</u>	)
-		STOR	AGE	
	Name of Cur	,		
	MAKE OF CAR	LICE	YSE NO.	
	Studebaker	1486	237	10.
d	DATE LEFT  5/11  P. M.	5/14	ALLED F	. M.
	CHARGES			
	Storage 3 Days	50	1	50
	Gasoline 7 Gals.	25		75
	OII Qts.	0		
	Washes /	A INC		25
	Charges on Repair Ticket No. 79	3	4	65
	Charges on Tire Tag No.			
	Promised	Total	9 mployee	15
	5/14 A.M.	a	Piel	
	Office Chec	k-Sto	orage	9
	7.	No. A	265	
	Name It of			
	Address Hebster	Bis	B	20
1	MAKE OF CAR	LICE	NSE NO.	70.
	Studebaker	1486	23 /	no.
	646221	Bil	l	
	CARTAG TURNED		ES PAID	-
	IN TO CASHIER	\$ 9.	15	
-	Present this Check	0		
	Claim Check No.		65	
	5/14 A.M.	B.	LOYEE	1
	ALL CHARG	SES C.	0. D.	
	Not Responsible for	Loss by Fire	or The	
	COMFORT PRINTING SPECIALTY CO. ST. L	DUIS, MO. AL	L RIGHTS RES	ERYLD

3" Wide and 9" Long. THE PRICES.

100, \$1.25; 250, \$2.50; 500, \$4.50; 1000, \$7.50;

2500, \$15.00; 5000, \$25.00. Printing Name and Address on the Claim Check, \$1.50 per thousand extra. If less than a thousand cost will be \$1.50.

#### THE STOCK ROOM RECORD CARD FORM 62.

This form is a white index cardboard, 4x6 (standard size), printed on both sides. It gives a complete description of the article and gives a maximum and minimum quantity you should keep on hand.

The illustration shows that 10 fan belts, No. 2212, was received on January 10th, and on the 21st of the month, one was withdrawn from stock, leaving a balance of nine on hand. On January 22nd, and February 6th, 7th and 12th, there was one taken out of stock on each of these days, which left a balance on hand of five. As our minimum amount called for four, we at once re-ordered again, and

on the 13th, ten of them have been received, which replenishes our stock again.

By footing the columns of the total received and the total issued, and by bringing down the balance on hand you, at all times, have a self-balanced inventory. The amount issued plus the balance on hand should give you the total amount of your receipts. With this system you can account for every part in your stock.

THE PRICES.

100, \$1.00; 250, \$2.25; 500, \$3.75; 1,000, \$6.50; 2.500, \$14.00; 5,000, \$25.00.

MAX.			RTIC			Y	B	EL	_								NO		212	2			
192	۵	ENTERED FROM	RE	CE	VE	0	ISSU	ED	ВА	LANC	Ε	DATE 192	0_	ENTERED FROM	REC	EI	VED	15	SUE	,	BAL	AN	С
1	10				11	2						4	6	FOW'D.	Ш	12	20		1	6			1
	21					1		1			9	4	9			1	0						
	22				1	1		1			8	5	6			1				1			1
2	6				1	1		1	Ш		7		7			1				1		1	1
	7	and the			1	1	1	1	Ш		5		9		1	-				1		1	1
	12	50			1	1	1	1		1	5		9		1	-		-		1		1	
2	13				1	2		-		$\perp$			11		11	-				1	10		9
2	14				1	1	-	1		1		7	5		1	-		1		4			
2 3	27				1	1	$\perp$	1	$\sqcup$	1			20		1	-		1		4			
2	27		$\square$		1	4	-	1	$\perp$	1	2		21		$\sqcup$	1	$\sqcup$	-	11	4			
3					+	+	++	1	Н	1	4		23			-		-		1			
	9	N .		1	-	4	-11	1	Н	1	-1		30			1	0		$\sqcup$	1			
	15	-	$\Box$	_	1	1	-	1	-	11	9	19				-	$\sqcup$	-		4		1	,
	21	A . M. Ap 100			1	1	11	1		-	8		6			-		-	H	1			
	23	-		1	1	+	11	1			7		7			-				1		1	_
	23			-	1	1	11	1	1		6	10	11		-	-		-		1		_	1
if	2			1	1	+	-	1	-		5		12		-	-		-		1	-	1	
	6	March 1		_	2	1		1	1		4		30			14	-	-	3	1			9

6" Wide and 4" High.
THE STOCK ROOM RECORD CARD FORM 63.

This form is printed on a white index cardboard, 8x5 (standard size), printed on two sides.

The illustration shows that on January 4th, twenty gaskets used for Ford cars were ordered on purchase order No. 146, at the rate of 30 cents each or total amount of \$6.00. Part shipment was made under date of January 20th, of eleven, under factory invoice No. 1406, and complete shipment was made under date of January 29th, factory invoice 1502.

This form also provides for the amount taken out of stock. as shown above, under date of January 20th, a requisition

was presented at the stock room No. 142 for one, which leaves a balance on hand often. As shown above the cost per gasket is 30 cents. By deducting same from the amount received leaves a balance on hand of 10 gaskets, representing three dollars in cash. By footing the amount of the cost columns of the issued and on hand and comparing same with the amount and cost of those received, you can, at all times, show whether or not your record is in balance.

THE PRICES.

100. \$2.00; 250, \$4 00; 500, \$6.50; 1,000, \$10.00; 2,000, \$22.50; 5 000. \$40.00.

FOR IV	OF PART	G A S	KE	Т		chell.	FOR_	FORL	)	CAR		PART NO.	300	2
MODEL	14.7			MINIM	UM	8	1000	_Cost	30 -	5-10-	.35	SECT		3
	ER USED IN											BIN		
77.	ORD	ERED			TO THE	RECE	EIVED	71.7		ISS	UED		0	N HAND
DATE	PURCHASE NO.	QUAN.	co	ST	DATE	INVOICE NO.	QUAN.	COST	DATE	SALE NO.	QUAN.	COST	QUAN.	AMOUNT
1-4	146	2.0	6	00	1-20	1406	11	3 30	1-20	142	,	30	10	300
	140	20		1	1-29				1-22		1	30		279
10 10	to a contra				1-27	7502			1-28	,	1	30	8	24
PER DES	has the		City .		7,830	The state of		and the last	1-29				17	511
									2-6		1	30	16	48
-20	500	20	7	00	5-10	2612	20	7 00	3-1	210		30		45
			/						3-4	219		30	14	42
lus.	Lana lak								3-26		1	30	13	39
dod	n mil				192		-		4-6	262	1	30	12	96
	in habita	3							4-9		1	30		33
							-		4-20		1	30		30
										401	- 1	30		27
610						-	-			407		30		24
			-				-		5-10	6	2	60	28	9 4
200							-			501	2			82
			-	-		-	-	-	5-24			30	The second second	79
	Prom			_		-	-		6-2	601		30		76
-				-	-		-	-	6-9	COMMON PROPERTY.	2	60	-	70
					-	-	40	1300			20	600	-	700
	T PRINTING BPI	40		00	-	-		1300		Market Market	-	-	THE OWNER OF THE OWNER,	1

# REPAIR TAG-Form 40.

REPAIR TAG No. 503  Unner No. 8261 A Date Rec't Oct 8  Wate of Dat Ford Style Pleasabout  REPAIRS WANTED  Brand Values Clean Carbon  Straighten Radeus Rod  Out on New Fender  on Right Front  Tighten Energency Brake
When Provised - Date Oct 10 Time 9 ribrek  Derer Sign here Charles Murray  Attenss #27 Man demuce Place  Phone No. Lindell #762 Place when noty
AUTOMOBILE REPAIR CHECK No. 503 PRESENT THIS CHECK WHEN CALLING FOR CAR  DUTSET Charles Munay Whee Provised—Date Out 10 Time 9 February
ALL REPAIRS CASH ARE NOT RESPONSIBLE FOR LOSS BY FIRE OR THEFT

#### Keeps Your Repair Business Straight.

The Repair Tag is 4 inches wide by 10 inches long. It is printed on one side and has sufficient room for general repair instructions. The form is complete, containing all information necessary for the repair order in the shop.

It records the license number, the time car is left and when promised. It has a space for the owner to sign when he leaves his car and also when he takes it away.

There is a claim check attached to the tag with which can be torn off at the perforation, which contains the same number as the repair tag. On this the owner's name is entered and the time when the job is promised. The owner presents this check when calling for the car. Both the repair tag and claim check are numbered alike.

This repair tag will handle your repair work in a practical simple manner. No red tape, and everything complete.

100\$2	2.00	500	\$ 6.50
250	.00	1000	10.00
5000		\$40.00	

Printing Name and Address on Claim Checks \$1.50 per 1,000 extra. If less than 1,000 are ordered the cost will be \$1.50.

#### THE COMFORT SYSTEM OF TIRE RECORDS.

This system provides for an accurate record of all your tire business, including your repairing. There are three forms, the Tire Repair Tag, the Tire Stock Tag, and the Casing and Tube Record Card.

Every tire or tube coming into your shop for repair should have a Repair Tag, and the customer should receive a claim check for it. You will see it described below.

The Casing and Tube Record Card and the Tire Stock Tag are a combination system and should be used together.

GARAGE SALES BOOK. Form 65.

Name	0.	a a			26	1917
Address	0 4	151	acl	ede	Ro	ad
0.0		Carr	O	et	August	
8	Gate C	asoline	- 0.	27	1	2 16
2	Qte. O			20		40
-	Lbe. G	****			_	_
	Storag				_	
L	Tires-	Tubes 344	4		-	5 85
	Vulcan	izing			-	-
-	Batter					-
Repairs	1/	2 Hours L	abor	70	-	1 05
Repairs		Parts				-
	Sundri	es and Supp	Hee		-	-
	-				-	-
-	-				-	-
-1	4				-	0 11
-		Tot	al I		11	146
AH MI	Received	t of South to	dening	and	remo	. != +==

The Sales Book is 33/4x71/4 and is made especially for the automobile business. It is complete in every way and will enable you to keep track of your sales, either for cash or charge customers. It contains everything necessary in your business, from gasoline to sundries and supplies, including tires, repairs, parts, etc.

The book contains 50 sets of leaves, original and duplicate. Each set is numbered consecutively. Carbons are furnished in each book. The books have a space for your rubber stamp, if you wish to stamp them, and also a space for your customer to sign when he has taken away the goods.

When used in connection with your cash drawer, it will enable you to keep absolute record of your sales and will prevent you from forgetting to put down charges which you are losing now

10	Books																		 				٠.	.\$		L	50
25	Books																		 	 					1	3.	2
50	Books				 																				1	5.	75
	Books																										
	Books																										

### TIRE REPAIR TAG No. 43491 NO DATE LEFT DATE PROMISED 5/11 5 5/12 -CHARGES 20 Tire Change Material PRESENT THIS CHECK WHEN CALLING FOR THE OR THE TIRE TAG NO 455 ALL CHARGES C. O. D.

### TIRE REPAIR TAG.

Form 20.

The tire tag is 2%x51/4, printed on one side in black ink, and numbered on the tag and claim check in red ink. The tire tag is used when any tire or tube is left for any purpose whatsoever. claim check should be presented when calling for the tire or tube.

100\$0.75	1000\$	3.50
250 1.50	2500	8.00
500 2.50	5000	15.00

Printing Name and Address on Claim Check \$1.50 per 1,000 Extra.

If less than 1,000 are ordered the cost will be \$1.50.

#### PROSPECT AND SERVICE RECORD CARD.

Comfort System of Prospect and Salesman's Records.

Form 70.

1	2 3	4	5	6 7	8	9	10 1	1 12	13	14 1	5 16	17	15 19 20 21 22 23 24 25 26 27 28 29 30 31
	IMAN	le	ha	rle	07	ni	lle	v				DAT	may 10, 1917
1	DDF	ESS	(00	,5	14	6 1	loa	la	m	u		BUS	May 10, 1917
1	мно	70	SEE	d	el	<u></u>		_					RESS , , "
1	SALE	SMA	n 6	Pois	Loh	t	Jo	h	ns	or	_		
CALLS	100	INTERVIENTO	INTERESTED	TYPE 09 CAR	CHANCE TO	090000	WILL OBTAIN	HONEY	USED CAR TO	SOVERED	TARE UP WITH	SOLLOW UP	RESULT OF INTERVIEW
1		/	1	R				1					Not ready yet
3	1												
3		1			1			/					Still expecting funds
4	/		,										0 00
5		1			/		28	á		1			Setting Garage ready
6		1				1	28						5/28.
7									1				

The Prospect Record Card is of white index cardboard, 6x4 (standard size), and is a record for listing and following up prospects.

1 2 3	6 6 7 8 9 10	11 12 13 14 15 16 17 18 19 20 21 22 23 24	25 26 27 28 29 30 31
OWNER	B NAME Char	SPECT AND SERVICE RECORD CARD LES MULLEV ADDRESS 1910	Olive St
DATE S		28 1917 MOTOR NUMBER /	241967
DATE D	ELIVERED MA	e 4. 1917 TYPE Runa	bout
SALESP	IAN _	Robert Johnson	1
	Put o	n Steined Springs	reld Starte
191 7		SERVICE REPORT	THOST OF THE BUTTERS
luce 6	adjust	ed motor	
- 8	Changed		
- 12	adjuste	d Trans Bunds	/
		a contract the contract	9

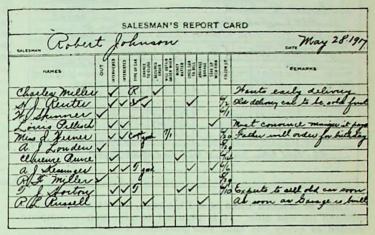
The Service or Owner's Record Card is printed on the back of the Prospect Cards and provides for a record of the service given after the sale is made.

This card will sell more machines than any other record on the market. Your salesman can tell just exactly where his prospects are. By following them up at the proper time, he can make many a sale he would otherwise lose, as this card gives a complete history of the prospect. By keeping record of your free service, you will be able to give satisfaction to your customer. You can tell whether his machine is acting right or whether the new driver is abusing the machine through ignorance. You will also be able to shut off some of these free service grafters who like to work in on you for all they can.

100\$1.25	1,000\$ 8.00
250	2,500 17.00
500	5 000 28.00

#### THE SALESMAN'S DAILY REPORT CARD.

Form 71.



FRONT

s	ALESMAN'S REPORT	OF NEW PROSPECT	rs	122
mare 1	BUSINESS ADDRESS	PERIODNE ADDRESS	-	Tree Line
	1916 Olive St.	+814 Hashington	art Limbs	Tev 9
6 b Thaton	4312 Lalanette	No late bumber	birel	and of
Carle Thoupon	1416 Belt ave.	3819 Lailede auc 4915 Nest Pine	Part Who	eres 8
				H
ban var bainer	To Square and			
Control of the Control				
	THE REAL PROPERTY AND		A SHOULD SHOW	

BACK

The Salesman's Report Card is made of white index board, 8x5 (standard size), and is printed on two sides.

On one side is a record of the calls made by the salesman for a day, showing just what his results were on each call. With this record filled out, a picture of the salesman's work for the day is shown, and just what he has accomplished.

On the other side is a form for listing new prospects. By listing every prospect that comes under the salesman's notice and filling out the record cards, many prospects are turned into live customers because they are followed up at the right time and in the right way. The building up of large sales is dependent upon the proper recording of the prospect. A prospect card is filled out for each name reported and placed in order for following up.

100\$2.25	1,000\$14.00
250 4.50	2,500
500 8.00	5 000 48 00

#### CAR RECORD CARD.

#### Form 85.

#### Comfort System of Car Records.

1/1	49 /	1	he are			Car No. 4300 Motor No. 297943
on see Jan		3	18 Our Invelor No.	894		Coor Black
_	117/17 6			32#2	187942	6 Diese
COST R			SALE R			ETAILS OF CONTRACT
Cost of Car			Sale Amount	1365 00		Bale Amount 1397 4
Freight	32	49	Freight	32 45	Cash Payme	ma 57749
Demorrage	1 ,		-	-	Value of Car	. 300 00 877 4
Uniteding Gasoline & Oil		75	-	-	traded in	-
	-	15		1.0	-	Balance Due   520 00
Insurance	_	15	Total Sale	1397 45	Perable 8_	
Commission	68	25	Tetal Cest	12714		0_6 4
	1		Net Profit	126 00		Traced in Ford
Total Cost	11271	149	117 % Profit		No.1117	+26 Year 17 Model Towner

The Car Record Card is a Blue card, 8x5 (standard size), printed on one side. It is planned to give you a complete record of every car that you purchase from the factory.

The entries which the card provides for, completely identify the car, giving a record of the invoice from the factory, freight charges, etc.

It also has a space for the complete cost of the car, such as freight, unloading, insurance, salesman's commission, etc. A space for the record of the sale is on the card, showing the total amount of the sale and then you can figure up right on the card what your net profit is and the percentage of the profit.

There is space for details of the contract, showing what the purchaser paid, and if he had a trade-in, it shows the record there also, and if he is to pay the balance monthly, that is also recorded.

With this form, you will know just exactly where each car goes to and how much profit and what percentage of profit you make. It will also give you a complete detailed record of the car while in your garage or store room. This record is valuable to look over and see where you are making money and whether your extra charges on the car are eating up your profits or not.

100\$2.25	1,000
250 4.50	2,500\$28.00
500 8.00	5,000

#### USED CAR TAG-Form 35.

/	BOND FOR No. 210	BANKE Fred USED CAR No. 210
(	Box 12 9 8 1463 Bate 19 15 11 Journey	I lated in the The Courter
1	to Cut 2 1917	His stord /1000 to / Oct 7 19:7
10	Derhaling Lipina 23 85	Derhalty Lipeta 23 15
1(0)	Milles Pett 22000 ten tes	SILLING 7 20 50 to tol
	testes Fare	tota Jan
(	hearts	beats
1	LEAVE THIS TAG ON CAR	FORWARD THIS PART OF TAG TO OFFICE

The Used Car Tag is 3 inches wide by 10 inches long. It contains all the information necessary for keeping record of used cars, either bought or traded in.

It is divided by a perforation. When a car is received the information is entered on both parts of the tag. One part remains on the car; the other part is sent to the office. This part is just 5 inches wide and will fit into a standard card file. The tags are numbered on both parts so that a complete record of the transaction from the time the car is purchased until it is sold, including the overhauling expense, etc., is shown. This tag will be very useful.

100\$2.00	500
250 4.00	1,000

#### GARAGE REGISTER-Form 120.

-	-			Carp					_		gister	_		
-	15	: [	Parent P	PRINCE .	Marie a	Ser. 1 400 mg	erima.	-	-	PREST No.	\$11.75 131.7	(SechiE)		No.
1		1		- Brutt home	- Lelf	0.	0	193072			74. 7			
Sec.	646	7.4	LINE LA	Charge sell	- /	Ford	2	73.072	M-	_	200 1	-	-	
2.1	11/2	d		M. C. defutte	- All	Eistat.	5	Sector	4	lig	24.	1 .	Lame	2: Value
				Ego & Lome Stl.	-21 Louth	- Contact	-		-	100	124	1-1	Alterna	
4	6/62	J	+7631 Mg	- Malgari	Manage Sit Me	Calillan	al	22346	1		126. 7	1 6		
		-1		- State Congress	- Lett	- Contract	-	-			100	1	1	
1	1 (4)	А	41796	The state of	- 7	Danied!	Come	47.52.1	4		36. 9	1 10		
					- Son Breed			100			1		and the same of	
de	1 42	4	1491.Ch	Pattaland Ch.	- Ostalungh On	Hale S		23061	1	863	241	34	to Ked	600
		-1		Theline Walnut	- 1.14									
Her	1 63	23	(10)9 Kac	Pula var		Ford :	2	12.629	*		the 1	1	7	
7		51	The state of the s	- I I wath	- Lill									
/mt	7 62	1	Marge C.	- Souland Ohn	-	Believe	2	68472	6	-	13/4 15	1	-	
1		- 1		-	-						1			
_	_	_			-		_				-		-	
		-1		_	-	1	- 1						1	
_	_	_!		-			1				-		-	
		- 1		-	-		- 1							
_		-1		_	_	-	-	_	_	-	-	-	-	
		-1		_	-	1	- 1	27111						
_	-	4				-	-		-	_	-	-	-	
-	1	ı		_	-	1						1		
-		-		_	_	-	-	_	-	-		-	-	
- 1	1			_	_	1								
-	+	-	_		-	-	-	_	-	-	-	1	-	
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- 1	1	-1		_	_	1	- 1						1	
-	+	-		_	-	1	-	_				1		_
	1	1		_	_	1								
-	1	-1		_	-						1		1	
	1			-	_	1							1	
-	-1-	-	-		-	-	_			_	-	1	_	_

The Garage Register is a book 8%x10%, for registering cars that come into your garage for only a few days.

Some of the state automobile laws require such a registration, and this book is designed to make a very simple register for the garage.

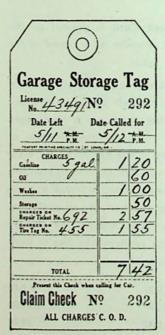
It will record all the information required by the laws, such as the date of arrival, license number and state, the owner's name and address, the driver's name and address, make and model of car, motor number, number of cylinders, description of repairs, charges and date when the car is taken out.

Each book has 26 leaves and has sufficient room to record 500 cars.

It is made of good paper, which will take ink very satisfactorily and is securely bound.

The Simplest and Most Economical Garage Register Book on the market.

Price, \$1.00 each; \$11.00 per doz.



## GARAGE STORAGE TAG.

### Form 15.

The garage storage tag is 25xx51/4 printed on one side in black ink, and numbered on the tag and claim check in red ink. This tag will insure getting full charges for all cars left with you for storage. It also insures the proper identification of the owner of the car.

100	\$0.75	1000	3.00
250	1.50	2500	
500	2.00	5000	13.50

Printing name and address on claim check \$1.00 per thousand extra. If less than 1,000 are ordered the cost will be \$1.50.

# THE COMFORT SYSTEM OF STOCK ROOM RECORDS.

Every garage and automobile dealer should have a stock room. In this stock room should be kept all parts for sale, or for use on repair work, also the surplus tools used around the shop.

This stock room should be enclosed and one person should be responsible for receiving and giving out the articles which belong in the stock room.

In order to assist the stock man in keeping track of everything, he should have the proper records for recording all the articles received and all the articles given out. Nothing should be given out without a requisition signed by the owner, or the foreman of the shop.

Our Stock Room Records give a simple but accurate system for keeping track of all parts, tools, etc., purchased by the repair shop and garage.

It is very important that you know how much you are purchasing and how much you are selling. It is also worth a great deal to know that every item that you give out goes to the proper place and is not given away for nothing.

Unless the proper precaution is taken, many items which you purchase can be put into repair jobs without any charge for them. Also valuable parts may disappear from time to time without the proper stock records.

By using a requisition for everything that goes out of the stock room and by keeping a record card on every item, you will be sure that you will know just how your stock stands.

#### REQUISITION ON STOCK ROOM.

Form 45.

Make of Car	red a. Miller  Fard Modern	Repair No. 489
Quantity Required	ARTICLE	Part Numbe
1	Com. Brush	3165
The lates		
1000	The delinering	
	Old man's	
-		
bel -	all blood eta cold to trolling	
100	THE PERSON NAMED IN	

The Requisition on Stock Room is a manila sheet 6x4%, printed on one side, blocked 100 to the block.

The use of this blank prevents an article being taken from the stock room for an improper use. With an order that nothing shall be taken from the stock room without a properly signed requisition, you will not miss as many things as you are missing now. Each requisition gives a record of what is done with all parts removed from stock room.

500\$1.75	5,000\$10.00
1,000	10.000

### NO. 1 STOCK ROOM RECORD CARD.

Form 60.

0.00		_	frond	-		ar Mod		er 3 /	40		
Country in	IVED	of F	withDRAW	-	-	IVED	-	_ Sell	_		
Date	Amount	Date	Repair No.	Amount	Date	Amount		Repair No.	Amour		
19/22	10	11/23	89	/	-7776	3	1/30	298	1		
		11/30	116	/	1		2/13	346	1		
		12/3	142	/	2/2/	10	2/28	389	1		
		12/20	168	/			3/16	406	1		
		12/30	193	/			4/7	443	1		
		1/6	233	/			5/1	469	1		
		1/16	260	-/			5/11	489	1		
Total /O / Total				7	Total Received	1.3	Total Withdrawn   7				

The Stock Room Record Card is a buff cardboard, 6x4 (standard size), printed on two sides. It gives a complete record of any stock item, showing date and number received, date and number withdrawn and the number of the repair job it is used on

It has a record for 28 receipts and 28 withdrawals, and balances every seventh one. It is practically a perpetual inventory for your stock room.

The record can be kept either in the stock room or in the office. If kept in the stock room the card can be hung in the bins or kept in a file.

100\$1.00	1,000\$ 6.50
2502.25	2,500
500 3.75	5,000

## NO. 2 STOCK ROOM RECORD CARD. For the Larger Stock Rooms.

Form 61.

	0	we	0	El.	ear	_	48				11	-1	11.				_
ros	-		Can	-	-	-	CAR	mode.	64.	-	_	SER US	EDINO	_	TE CAR		-
-		*96*	_	_		CIVED		-	-	-	-	_	_	-	DELIVE M	_	
Des	000	Bates	07	Date		09	Served.	lex	-	20	No.	G. a.	Det	-	0	ten ber	
17	146	Fal	10	15/26	5536	10	10	658	173	1	1	9			-		~
					1100			7/1	171	1	1	3					
17	200	-		17		-		7/12	209	_/_	1	-7,					-
115	207	re	10	23.9	7129	10	10	12	201	-1	1	-6		-			-
-	****							17	1776	-1	1	M				-	-
/17	219	Eig	2	1/19	70+2	2	2	1/14	357	1	1	3	100		1		
100		1						111	369	1	1	2					
117	200	Fix	10	11/.	8++6	10	10	1.67	381	-	4	-5	-				
74	LL.	100	10	14		10	10_	9/1	422	1	1	11			-		-
100	Cid							14/9	541	1	1	10					
		-						1/12	593	_/,_	1,	9					
-	-	-	-		-	-	-	133	9/	-4	1		-	-	-		-
-	-		-		-	-	-	1500	110	-1	1	6		-			-
								19/10	693	1	1	5					
							1	11/1	720	_/	1	4				_	-
-					-		-	-32	757		1	3		-		-	
-	-	-	-	-	-	-		100	76	-1,-	-	14	-	-	-	-	-

The No. 2 Stock Room Record Card is a buff cardboard, 8x5 (standard size), printed on two sides. It gives a complete record of any stock item, showing date and quantity purchased with Order number and routing—date and quantity received with Invoice number and total received—date and quantity withdrawn and the Requisition number; also the balance on hand.

It has a record for 40 receipts and 80 withdrawals, and balances every line. It is practically a perpetual inventory for your stock room.

100\$2.00	500\$ 6	.50
250 4.00		.53
5000	\$40.00	

FORM 11					GAS	SOLIN	E RE	PORT		Date	Jan	-16	10//	4.
						SALES	RECO	ORD		0				
Ticket No.	Cat.	QIL	Amoun	. 1	Ticket No.	Gat.	Qts.	Amo	unt	Ticket No.	Gal.	Qts.	Amou	int
642	4		1	961	Forward .	176	10	35	164	Ferward	277	22	17	80
643	5	2	1	32	667	4			96	191	4			96
144	7		1	8	668	3			72	692	10		2	40
645	5		1	20	669	6		1	44	693	5		1	20
646	6			44	670	1	2	1	56	694	7		1	68
647	8		1	92	671	7		1	68					
648	3	2		74	672	10		2	-					
649	8		-	72	673	2		The same	48	1280=	5 1/2			
650	4			96	674	4			96					
651	10			40	675	4	2	1	08					_
652	9		_	16	676	5		/						_
653	6	2		56	677	7		/	68					_
654	4			96	678	3	2		84	2				_
655	8		1		179	10		2	1					
656	7		1	_	680	9		2	16				-	_
657	3	_	_	72	181	4	2	/	-	bushing.	100			_
658	10		2		682	7		/	68					_
659	4		-	96	683	3	-	-	72		-			_
660	4	2	-	08	684	4	2	/			-		1	_
661	5		1	20		9		2	-			_		_
662	4			96	686	6		1	44	124	-			_
163	11		2	64		3	1111	1	72			_	-	_
164	3			72	688	8		/		10000	-			-
665	3	2		84	689	4		-	96		_	_		_
666	5			20	690	3	2	-	84					
TOTAL	176	10	35	4	TOTAL	277	22	67	80	TOTAL	308/2	yac.	74	04
		OURC	WN USE							RECEIP				
Requisition	Pur	pose U	sed For	Gal				On han	d at	6:30	_	A. M.	86	_Gel.
721	3015	Seme	e Car	16	2	Received	from_	30.	6.0.	_Ticket No	4211	-	200	
729	nr:	Suri	w Car	5		7	-	3.00	10.	Ticket No	42/1		100	Gel.
734	Clia	mma (	Parts	2				Sold	11	/2 Gel		etal In _	2-1	_Oal.
761	Ford	Dem	notestor	3								Dut -	61	_Gel.
		-					. 1	08 1/2				u -	740	_Gal.
						Total Se	41_	/-	- 0	10 7		in	lees .	_
TOTAL				16	2				81	K_	0 -	1	1	

## THE COMFORT SYSTEM OF GASOLINE RECORDS.

#### Form 111.

#### Daily Gasoline Report.

The Daily Gasoline Report is a blue sheet, 8½x11, and contains all the necessary items for keeping track of your gasoline every day. You are buying and selling gasoline all the time and without a proper system of recording what you have received and sold, you are liable to lose a good deal of money on it.

By keeping the proper records, you can make your gasoline business a profitable business; that is, you must get paid for every gallon of gasoline that you sell, and if you are getting the right price, you will make a profit on every sale.

The Daily Report records each sale, showing the sale ticket number, the quantity and the price.

The report has room for 75 sales for each shift. It also has a record showing how much you use for your own machines or for cleaning in your repair shop.

It also shows the amount of gasoline that you receive each day and has space for making a record of your gasoline on hand, both morning and evening, or every time you change men.

100\$2.00	500\$ 7.50
250 4.00	1,000 12.00
5,000	

PROFIT MOTOR CAR CO. BANK TOWN, MO.	Gasoline Ticket No	649		
Name athur Donnele  Address 706 9. B  COMPORT PRINTING SPECIALTY CO. 87 LOUIS, NO. (ILL HIBMES RESERVED)	Date Jan roadway	19/8 License No. 13/642		
Gallons Gasoline  1/2 Gallons Cylinder Oil  Pounds Cup Grease  Pounds Heavy Grease	@ 24 @ 80 @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @ @	/ 92 40		
	TOTAL	2 32		
Charge Received	d by	Domeley		

### THE GASOLINE SALES TICKET.

#### Form 110.

The Gasoline Sales Ticket is 51/2x4, and is in duplicate. The original is white and the duplicate is yellow. These are both numbered alike and will record every sale that you make of either gasoline, oil or grease.

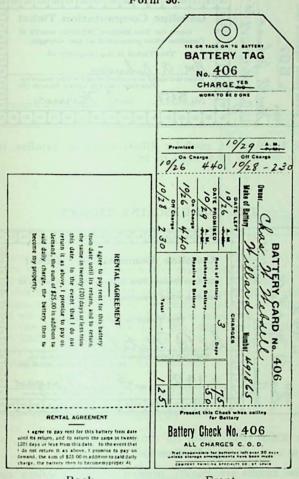
You can use it for both cash customers and charge customers. They provide a check on your gasoline business. When used in connection with the Daily Gasoline Report, you can tell if you are getting your full amount for gasoline sold and whether you are making money on it or not.

100\$1.00	1,000\$ 6.00
250 2.25	2,500
500 3.75	5,000 18.50

Printing Name and Address on both tickets, \$3.00 extra for 1,000. \$6.50 extra for 5,000, \$10.00 extra for 10,000. If less than 1,000 are ordered, the extra cost will be \$3.00.

#### BATTERY TAG.

Form 30.



Back.

Front.

The Battery Tag is made to cover all the requirements for the renting, storing, recharging and repair of batteries. It is a tough manila tag 10x3 inches, and is divided into three parts by perforations.

The first part is the battery tag and is to be tied or tacked onto the end of the battery when the battery is left. It has instructions for repairs, when the battery is promised, when the battery went on charge and when it was taken off.

The second part is the office record, 5x3 inches (standard size), and contains all the necessary information. It shows customer's name, make and number of battery, date left and promised, and the charges for rent, storage, charging or repairs

The third part is the battery claim check, which goes to the customer, and is to be presented when he calls for the battery.

Each of these three parts is numbered with large figures in red ink. The office card and the battery check both have the rental agreement printed on the back, so that you have a rule by which to hold your costumer in case he does not make proper return of the rented battery.

100\$2.00	The state of the s
250	1000 10.00
5.000	\$40.00

Printing Name and Address on Claim Checks, \$1.50 per 1000 extra. If less than 1000 are ordered the cost will be \$1.50.

#### INSPECTION REPORT.

Form 115.

Name Crost B. Address 4849 d	_		89	Trucking Total Milesge is important	- 46
Phone No. S	lelm	av +927	129	Har Miles 19476 X Mo	-21
MOTOR	uire Shop	Spart plugs	-	REAR ANLE	eriala.
Is motor tight in frame?		Wiring	a	Bearings	
Compression	-	STEERING GEAR	-	Are wheels in line?	-
Do rates need granting?	-	" " Connections	-	Condition of brakes	
Carbon		Is it being properly oiled?	-	SPRINGS	_
Are timing gears noisy?	1	Is there too much lost motion?	-	Are clips light?	
Platon Rings	-	SERVICE BRAKE	1	Do insees need alleg?	-
Connecting rad bearings		HAND BRAKE	1	GREASE CUPS	- 1
Main bearings	-	FRONT AKLE	-	Are all cups filled?	-
Push rada	-	How are wheel bearings	-	GENERATOR	-
is motor kept clean?		Are wheels in line?	1	Does it show proper charge	
DILING SYSTEM	_	In sale in line?	-	Chain inneion	1 2
Ol ired	-	CLUTCH	-	STARTING MOTOR	
Pressure	-	Ones it gran?	a	Condition	
Circulation	-	Does d sto?	u	BATTERY	-
COOLING SYSTEM	-	Are the refers gressed!	-	Was it properly filed?	12
Reduter	-	is thrust bearing select	-	Gravite test	11
Pump	~	Propellor shaft bearing		TIRES	- 1"
Are corrections tight?	á	Universal joints	~	Pressure	-
Is fan being lubricated?	14	Are universal points greated?	-	Front 55 # 50 L	-
is fan property adjusted?	7	TRANSMISSION	-	Res 10 8 10 L	
CARBURETOR ADJUSTMENT	a	Condition of goars	-	LIGHTS	_
Carbureter leak	3	Condition of bearings	-	Front	- 1
Gassine Inc	-	Condition of green	-	S-Ge	
IGNITION SYSTEM		DIFFERENTIAL	-	Prof.	1
Timer	-	Condition of grary	-		-
Col	1	Condition of greate	-		
Time Reported _ 2 3/4	Hrs.	V2 Pounds Cup V1 Pounds Trans.	der Oil Grease	La Flomp	ton

The Inspection Report is a white sheet, 8x9, blocked 100 sheets to the block.

It is to be used in all inspection work and gives a complete list of the parts and places on the machine, which should be inspected, including all the necessary oiling and greasing.

Before a new car leaves your garage it should be thoroughly inspected and a complete record of the inspection made. This is filed away when the car is sold, under the owner's name.

When the car is brought in for the next inspection, this first inspection report should be brought out and gone over before the new inspection is made.

A record should be entered on the second inspection card, showing the speedometer reading, the mileage on the last inspection and the net mileage run between the inspections. This will have a great deal to do with showing the mechanic whether the car has been properly handled since the last inspection. It will assist the dealer in giving instructions for the handling of the car, which will meet each individual case and will save much dissatisfaction and expense later on.

When the car is brought in for any sort of inspection or service, the last inspection card should be brought out, so as to show whether the present trouble with the car was giving trouble on the last inspection. If so, this particular trouble should have more careful attention than any other which might turn up.

The report provides that items which are marked "A" required attention and were attended to, and items marked "S" should go to the shop and have shop attention.

The time required for the inspection is shown on the report, and also all the oil, grease and material.

100\$2.00	500\$ 7.00
250 3.75	· 1,000 10.00
5.000	\$35.00

Form 50.

#### THE DAILY TIME TICKET.

The daily time ticket is a manila sheet, 8\(^4\x5\)\, printed on one side and blocked 100 to the block. The use of this sheet will give you a record of your mechanics' time each day, showing how much time was put in on each repair job. It will assist you in making your pay roll, as it will tell whether full time was put in or not.

500\$2.50	5,000
1,000	10,000

#### COMFORT GASOLINE COMMUTATION SYSTEM.

Our Commutation System consists of commutation tickets for the selling of gasoline.

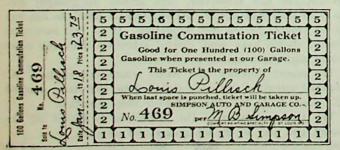
These are made in four different styles:

#### THE 50-GALLON GASOLINE TICKET.



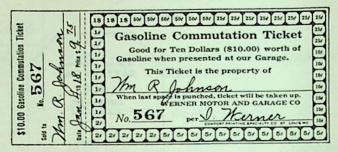
The 50-gallon ticket, good for 50 gallons of gasoline, running in amounts from one to five gallons.

#### THE 100-GALLON GASOLINE TICKET.



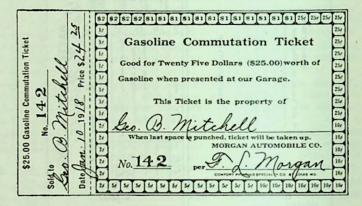
The 100-gallon ticket, good for 100 gallons of gasoline, running in amounts from one to five gallons.

THE \$10.00 GASOLINE TICKET.



The \$10.00 ticket, good for \$10.00 worth of gasoline, running in amounts from \$1.00 to 1c.

#### THE \$25.00 GASOLINE TICKET.



The \$25.00 ticket, good for \$25.00 worth of gasoline, running in amounts from \$2.00 to 1c.

These tickets are  $5\frac{1}{4}x2\frac{1}{4}$ , printed on tough yellow cardboard. They are printed in two sections, divided by a perforation. The stub is the office record and contains the name of the purchaser, the date and the amount.

The ticket part goes to the customer and it has spaces around the edge to be punched for the amount of gasoline that the customer gets. This part also has a space for the customer's name. The office stub and the ticket both have the same number.

The use of the Gasoline Commutation Ticket will increase your gasoline sales to a large extent. It will give you the money in advance for your gasoline, and you can tell how much to contract for from time to time.

You can sell the ticket at a slight discount, such as  $2\frac{1}{2}$  per cent, 4 per cent or 5 per cent. This will give the customer an inducement to buy his gasoline from you and will give you a lead over your competitors. It will bring the cars to your gasoline station instead of his. You know that this means tire sales, more accessory sales and a larger repair business.

Your name is printed on all orders. As the tickets are made from our own individual plates, they cannot be readily counterfeited.

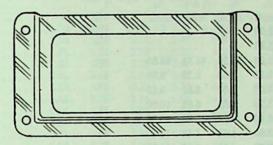
The prices for any style, including your name printed in, are:

100\$4.00	1,000\$12.00
2506.00	2,500
500 9.00	5,000

Prices, Net.

FORD PARTS NUMBERED TAGS.

# 2524 C



Form 59 is a small piece of tag Board, size 116"x134". There are 1100 pieces to a set, comprising a list of all the Ford Parts and Accessories, used on the Stock Bins.

Much time is daily lost looking for certain parts numbers because the bins are not properly marked. It helps you keep your stock room troubles at a minimum.

In the illustration we find No. 2524C is the Standard Ford Differential Pinion. The cut is full size and can be clearly read across your stock room.

A complete set of Ford Bin Numbers.....\$7.50

Form 59B is a card holder for the Ford Stock list numbers. These are made of good Brass and will not rust. They are to be attached to the wooden bins and the cards inserted therein. These can be had in any quantity and are kept in stock for immediate shipment. There are also four pins accompanying each holder.

Price, per Gross.....

List Net.

#### MISCELLANEOUS ITEMS. Loose Cut Strings for Tags.

12-in. Strings, 75c per thousand. 16-in. Strings (for tires, etc.), \$1.00 per thousand.

#### Loose Wires for Tags.

71/2-in. Wires, 50c per thousand. 12 -in. Wires, 75c per thousand. Punch for Gasoline Commutation Tickets; good grade Steel Conductor's Punch......\$1.50



#### CARD FILES.

No. 35 (3x5 card); the size used on our battery card. \$2.50

No. 46 (4x6 card); the size used on Prospect and Service Record Card, and No. 1 Stock Room Record Card .....\$3.25

No. 85 (5x8 card); the size used on our Salesman's Report Card, No. 2 Stock Record Cards, Car Record. Cards, Casing and Tube Record Cards .....\$4.00

Each of the above card files is 8 inches long and has a capacity for 700 cards. The above prices include a set of alphabetical guides (A to Z) and a set of daily guides (1 to 31). They are made of solid oak and are in golden oak finish

	EXTRA	INDE	EXES	FOR	CARI	) FILES.		
A to Z	3x5-35c	per se	t			4x6-50c		
1-31	3x5-50c	per se	t		1-31	4x6-60c	per	set
Months	3x5-30c	per se	t		Month	s 4x6-35c	per	set
				-60c	per set			
		1x31	5x8	-70c	per set			
		Mont	hs 5x8	-40c	per set			
		Horizo	ntal	Ruled	Cards			
	3x5	-100,	\$0.45		1,000,	\$3.65		
	4x6	-100,	.60		1,000,	5.60		
	5x8	-100,	1.00		1,000,	9.00		

List Net.

J. R.

#### BLANK BOOKS.

Two-column Day Books.

Two-column Journals and Cash Books.

Three-column Journals and Cash Books.

Single Entry Ledgers, with Index.

Double Entry Ledgers, Assorted Accounts, with Index.

Double Entry Ledgers, for whole Accounts, with Index.

Record Books, with Margin

#### Full Duck, with Hubs.

No. 693/8. Crown Folio, size, outside, 95/x141/4 inches. Grey Duck sides, Red Russia corners, Spring Back and Hubs. Extra heavy Ledger Paper. All columns unit

ruicu,	
300 pages in book. Price, each\$3	.00
400 pages in book. Price, each	.50
500 pages in book. Price, each 4	
600 pages in book. Price, each 4	.50
Be sure to give style of ruling wanted.	
No. 069. Crown Folio, size, outside, 91/2x141/4 inches. F	ull
Duck, Slate Duck sides. Imitation Red Russia c	or-

ners. Spring Back and Hubs. Good grade Ledger Paper. All columns unit ruled: 300 pages in book. Price, each......\$2.50 

68. Cap Folio. Size, outside, 8\(\frac{4}{x}\)12\(\frac{12}{3}\) inches. Duck sides. Red Rubber corners. White Woven Paper: No. 68. Cap Folio. 150 pages in book. Price, each......\$0.80 Price, each..... 200 pages in book. Price, each...... 1.50 300 pages in book. Price, each...... 1.80 400 pages in book.

Price, each..... 500 pages in book. Price, each..... 2.40 600 pages in book. Market.

CARRIAGE BOLTS.



Manufacturers' Standard List

		Price	per 10	0.		5	
Length,	18 8:1/4	16	3/8	16	1/2	18 8%	3/4
Inches.	inch.	inch.	inch.	inch.	inch.	inch.	inch.
11/2	\$1.00	\$1.40	\$1.90	\$2.20			
2	1.10	1.52	2.06	2.40			
21/2	1.20	1.64	2.22	2.60	\$3.25	\$5.75	\$8.50
3	1.30	1.76	2.38	2.80	3.53	6.13	9.00
3½	1.40	1.88	2.54	3.00	3.81	6.51	9.50
4	1.50	2.00	2.70	3.20	4.09	6.89	10.00
41/2	1.60	2.12	2.86	3.40	4.37	7.27	10.50
5	1.70	2.24	3.02	3.60	4.65	7.65	11.00
51/2	1.80	2.36	3.18	3.80	4.93	8.03	11.50
6	1.90	2.48	3.34	4.00	5.21	8.41	12.00
61/2	2.00	2.60	3.50	4.20	*5.49	8.79	12.50
7	2.10	2.72	3.66	4.40	5.77	9.17	13.00
71/2	2.20	2.84	3.82	4.60	6.05	9.55	13.50
8	2.30	2.96	3.98	4.80	6.33	9.93	14.00
81/2	2.40	3.08	4.14	5.00	6.61	10.31	14.50
9	2.50	3.20	4.30	5.20	6.89	10.69	15.00
91/2	2.60	3.32	4.46	5.40	7.17	11.07	15.50
10	2.70	3.44	4.62	5.60	7.45	11.45	16.00
11	2.90	3.68	4.94	6.00	8.01	12.21	17.00
12	3.10	3.92	5.26	6.40	8.57	12.97	18.00
13	3.30	4.16	5.58	6.80	9.13	13.73	19.00
14	3.50	4.40	5.90	7.20	9.69	14.49	20.00
15	3.70	4.64	6.22	7.60	10.25	15.25	21.00
16	3.90	4.88	6.54	8.00	10.81	16.01	22.00
17	4.10	5.12	6.86	8.40	11.37	16.77	23.00
18	4.30	5.36	7.18	8.80	11.93	17.53	24.00
19	4.50	5.60	7.50	9.20	12.49	18.29	25.00
20	4.70	5.84	7.82	9.60	13.05	19.05	26.00

Intermediate lengths take next higher list, as  $1\frac{3}{4}x\frac{1}{4}$  takes list of  $2x\frac{1}{4}$ .

Bolts packed 100 in a package, %-inch and ¼-inch in thickness. %-inch and larger, 50 in a package. ½x6 and larger, 25 in a package.

#### ROLLED THREAD CARRIAGE BOLTS.

We carry the following sizes in stock.

 $\begin{array}{l} {}^{1}\!\!/_{4} x 1^{1}\!\!/_{2} \text{-} 2 \cdot 2^{1}\!\!/_{2} \cdot 3^{*}. \\ {}^{4}\!\!/_{6} x 1^{1}\!\!/_{2} \cdot 2 \cdot 2^{1}\!\!/_{2} \cdot 3 \cdot 3^{1}\!\!/_{2} \cdot 4^{*}. \\ {}^{3}\!\!/_{8} x 1^{1}\!\!/_{2} \cdot 2 \cdot 2^{1}\!\!/_{2} \cdot 3 \cdot 3^{1}\!\!/_{2} \cdot 4^{*}. \end{array}$ 

#### CARRIAGE BOLT ASSORTMENTS.

No. 7.

(Consisting of 1,000 Bolts.)

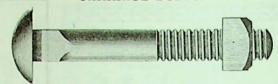
100 each—16x11/4, 2-inch.	
100 each-1/4x11/2, 2, 21/2, 3-inch.	
50 each—fex2, 3, 4, 5-inch.	
50 each—3/8 x 21/2, 31/2, 41/2, 51/2-inch.	
Price, each9251	\$15.86

#### No. 8.

(Consisting of 2,000 Bolts.)

100 each— fex11/4, 11/2, 2-inch.	
100 each-1/4 x11/2, 2, 21/4, 21/2, 23/4, 3, 31/2, 4-inch.	
50 each 16x1½, 2, 2½, 3, 3½, 4, 5-inch.	
50 each-3/8x11/2, 2, 21/2, 3, 31/2, 4, 41/2, 5, 51/2, 6-inch.	
Price, each	\$32.42

TURNED HEAD EAGLE OR NORWAY CARRIAGE BOLTS.



	List Pri	ce per	100.		
Length, Inches.	13 8 1/4	15g	3/8	16	1/2
1	. \$3.00	\$4.00	\$ 5.40	\$ 7.30	\$ 9.50
11/4	3.10	4.00	5.40	7.30	9.50
11/2	3.20	4.00	5.40	7.30	9.50
13/4		4.00	5.40	7.50	9.80
2		4.10	5.40	7.70	10.10
21/4		4.20	5.60	7.90	10.35
21/2		4.40	5.80	8.15	10.65
23/4		4.50	6.00	8.35	10.90
3		4.70	6.20	8.55	11.20
31/4		4.90	6.50	8.75	11.50
31/2		5.00	6.70	8.95	11.75
33/4		5.20	6.90	9.15	12.00
4		5.30	7.10	9.40	12.30
41/4		5.50	7.30	9.60	12.60
41/2		5.70	7.50	9.80	12.90
43/4		5.85	7.70	10.00	13.15
5		6.00	7.90	10.25	13.45
51/2		6.30	8.40	10.65	14.00
6		6.60	8.80	11.05	14.55
61/2		7.00	9.30	11.50	15.10
7		7.30	9.70	11.85	15.70
71/2		7.60	10.10	12.35	16.25
8		7.90	10.50	12.75	16.80
81/2		8.20	10.90	13.15	17.35
9		8.50	11.40	13.60	17.90
91/2			11.90	14.00	18.50
			12.40	14.45	19.00
10		n	12.10	11.10	10.00
	000	P. C.			

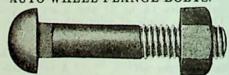
RIBBED OR NORTH PATENT CARRIAGE BOLTS.



Manufacturers' Standard List.

													P	'1	10	ce	p	e	r	1	0	0.											
Len	gt	h	i	n	Iı	n	el	16	28														16	8	21/	4	1	10			3	8	
11/2					 						3												\$	1.	00		\$1		10		-	1.9	
2																								1.	10		1		52		2	2.00	6
21/2																								1.	20		1	(	64		2	2.23	2
3																								1.	30	)	1		76		2	2.3	8
31/2																							3	1.	40		1	8	38		2	2.5	4
4																								1.	50	)	2	2.0	00		- 2	2.70	0
41/2																											2	2.	11		2	2.8	6
5																											2	2.5	24		3	3.02	2
51/2																															3	3.18	8
6	-																														3	3.34	4
		- 1				1		-//		 -		-																					

AUTO WHEEL FLANGE BOLTS.



No. 3, Square Neck.

Le	n	g	ţt	h	١,	I	n	c	h	e	S.								•			0				3/8	18	
21/2	١.													-												\$5.60 5.80	\$7.9 8.1	•
23/										•																6.00	8.3	•
3																										6.20	8.5	5

503 P. C. In lots of 100 or more, 607 P. C. MACHINE BOLTS.



List Prices Per 100.

			4150 1				100000		200			
Le	ngth, Inches.	1/4	75	3/8	76	1/2	16 8 %	3/4	7/8	1	11/8	11/4
		 \$1.70	\$2.00	\$2.40	\$ 2.80	\$ 3.60	\$ 5.20	\$ 7.70	\$10.50	\$15.10	\$22.50	
2		 1.78	2.12	2.56	3.00	3.86	5.58	8.25	11.20	16.00	23.70	31.50
21		 1.86	2.24	2.72	3.20	4.12	5.96	8.80	11.90	16.90	24.90	33.00
3		 1.94	2.36	2.88	3.40	4.38	6.34	9.35	12.60	17.80	26.10	34.50
-		 2.02	2.48	3.04	3.60	4.64	6.72	9.90	13.30	18.70	27.30	36.00
4		 2.10	2.60	3.20	3.80	4.90	7.10	10.45	14.00	19.60	28.50	37.50
		 2.18	2.72	3.36	4.00	5.16	7.48	11.00	14.70	20.50	29.70	39.00
5		 2.26	2.84	3.52	4.20	5.42	7.86	11.55	15.40	21.40	30.90	40.50
		 2.34	2.96	3.68	4.40	5.68	8.24	12.10	16.10	22.30	32.10	42.00
6		 2.42	3.08	3.84	4.60	5.94	8.62	12.65	16.80	23.20	33.30	43.50
61		 2.50	3.20	4.00	4.80	6.20	9.00	13.20	17.50	24.10	34.50	45.00
7		 2.58	3.32	4.16	5.00	6.46	9.38	13.75	18.20	25.00	35.70	46.5C
71	,	 2.66	3.44	4.32	5.20	6.72	9.76	14.30	18.90	25.90	36.90	48.00
8		 2.74	3.56	4.48	5.40	6.98	10.14	14.85	19.60	26.80	38.10	49.50
9		 2.90	3.80	4.80	5.80	7.50	10.90	15.95	21.00	28.60	40.50	52.50
10		 3.06	4.04	5.12	6.20	8.02	11.66	17.05	22.40	30.40	42.90	55.50
11		 3.22	4.28	5.44	6.60	8.54	12.42	18.15	23.80	32.20	45.30	58.50
12		 3.38	4.52	5.76	7.00	9.06	13.18	19.25	25.20	34.00	47.70	61.50
13		 3.54	4.76	6.08	7.40	9.58	13.94	20.35	26.60	35.80	50.10	64.50
14		 3.70	5.00	6.40	7.80	10.10	14.70	21.45	28.00	37.60	52.50	67.50
15		 3.86	5.24	6.72	8.20	10.62	15.46	22.55	29.40	39.40	54.90	70.50
16		 4.02	5.48	7.04	8.60	11.14	16.22	23.65	30.80	41.20	57.30	73.50
17		 4.18	5.72	7.36	9.00	11.66	16.98	24.75	32.20	43.00	59.70	76.50
18		 4.34	5.96	7.68	9.40	12.18	17.74	25.85	33.60	44.80	62.10	79.50
19		 4.50	6.20	8.00	9.80	12.70	18 50	26.95	35.00	46.60	64.50	82.50
20		 4.66	6.44	8.32	10.20	13.22	19.26	28.05	36.40	48.40	66.90	85.50
21		 				13.74	20.02	29.15	37.80	50.20	69.30	88.50
22		 				14.26	20.78	30.25	39.20	52.00	71.70	91.50
23		 				14.78	21.54	31.35	40.60	53.80	74.10	94.50
24		 				15.30	22.30	32.45	42.00	55.60	76.50	97.50
25		 				15.82	23.06	33.55	43.40	57.40	78.90	100.50
26		 				16.34	23.82	34.65	44.80	59.20	81.30	103.50
27		 				16.86	24.58	35.75	46.20	61.00	83.70	106.50
28		 				17.38	25.34	36.85	47.60	62.80	86.10	109.50
29		 				17.90	26.10	37.95	49.00	64.60	88.50	112.50
30		 				18.42	26.86	39.05	50.40	66.40	90.90	115.50
				6 P. C.								
			300	1								

Bolts with Hexagon Nuts-10 per cent extra. Bolts with Hexagon Head and Nut-20 per cent extra

#### ELEVATOR BOLTS.







Flat Head.

List Price per 100.

Dist Trice per 100.		
Length 1/4	16	₹8
%	\$3.00	\$4.00
7/8	3.00	4.00
1	3.00	4.00
11/4	3.20	4.30
1½	3.40	4.60
13/4	3.60	4.90
2 270	3.80	5.20

303 P. C.

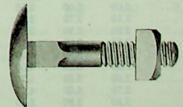
### MACHINE BOLT ASSORTMENT NO. 10.

Consists of,

Consists of,
50 each, \( \frac{1}{3}\)-in. x 1\( \frac{1}{2}\)-in., 2\( \frac{1}{2}\)-in., 2\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 4\( \frac{1}{2}\)-in., 2\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 4\( \frac{1}{2}\)-in., 2\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 4\( \frac{1}{2}\)-in.

25 each, \( \frac{1}{2}\)-in x 1\( \frac{1}{2}\)-in., 2\( \frac{1}{2}\)-in., 3\( \frac{1}{2}\)-in., 4\( \frac{1}{2}\)-in. Price, each

#### STEP BOLTS.



in ¼-in ¼-in ¼-in ¼-in	\$3 50 3.60 3.80
	in ¼-in. in ¼-in

356 P. C.

COACH SCREWS.

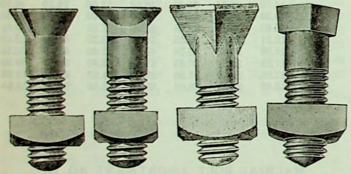


Length, Inches.	15	3/8	16	1/2	16 8 %	3/4
11/2	\$2.25	\$2.70	\$3.15	\$ 3.75		
2	2.45	2.96	3.47	4.11	\$ 6.00	
21/2	2.65	3.22	3.79	4.47	6.50	\$ 9.20
3	2.85	3.48	4.11	4.83	7.00	9.90
31/2	3.05	3.74	4.43	5.19	7.50	10.60
4	3.25	4.00	4.75	5.55	8.00	11.30
41/2	3.45	4.26	5.07	5.91	8.50	12.00
5	3.65	4.52	5.39	6.27	9.00	12.70
51/2	3.85	4.78	5.71	6.63	9.50	13.40
6	4.05	5.04	6.03	6.99	10.00	14.10
61/2			6.35	7.35	10.50	14.80
7			6.67	7.71	11.00	15.50
71/2			6.99	8.07	11.50	16.20
8			7.31	8.43	12.00	16.90
9			7.95	9.15	13.00	18.30
10				9.87	14.00	19.70
11				10.59	15.00	21.10
12				11.31	16.00	22.50
12			~	12.01	20.00	22.00
		506 P.	C.			

#### SKEIN BOLTS.

Size																													r		
1/2x7	-	•	-		-	•	-	-	-	-																					
16x71/2																															
																													12		
3/4 x 9																													18	3.3	0
													5	a	0	T	)	C	,												

#### PLOW BOLTS.



No. 1 Head. No. 3 Head. No. 5 Head. Campbell's Key Head. Short Sq.Rd.Head. Plug Head. Spc'l Plug Hd.\*

#### List Price Per 100.

Length, Inches.	3/8	170	1/2	20	6/8
3/4	\$2.00			\$4.50	\$5.70
7/8	2.00			4.50	5.70
1	2.00	\$2.60	\$3.50	4.50	5.70
11/4	2.00	2.60	3.50	4.50	5.70
11/2	2.10	2.75	3.70	4.75	6.00
13/4	2.20	2.90	3.90	5.00	6.30
2	2.30	3.05	4.10	5.25	6.60
21/4	2.40	3.20	4.30	5.50	6.90
21/2	2.50	3.35	4.50	5.75	7.20
23/4	2.60	3.50	4.70	6.00	7.50
3	2.70	3.65	4.90	6.25	7.80
31/4	2.80	3.80	5.10	6.50	8.10
31/2	2.90	3.95	5.30	6.75	8.40
33/4	3.00	4.10	5.50	7.00	8.70
4	3.10	4.25	5.70	7.25	9.00

\*Furnished only, 16x11/4 and 11/2-inch.

No. 1 and No. 3 Head, 357 P. C. No. 5 and Special, 20% Extra.

#### TIRE BOLTS.



Cut Thread.

#### Price Per 100.

Len	gt	h	[n	ıc	h	es	;.								1/8	8	216		1/4			16		3/8	
11/2			 												\$	0.	60								
13/4																	65								
2																	70		\$1.0	)5	\$	1.47	7 -	\$2.2	0.5
21/4																	75		1.1			1.54	1	2.3	30
21/2																	80		1.1	70		1.61		2.4	10
23/4																			1.5			1.68	-	2.5	0
3																			1.5			1.75	_	2.6	
31/4																	1		1.3	-		1.82	_	2.7	
31/2																			1.3			1.89		2.8	
33/4																			1.4			1.96		2.9	
4																			1.4			2.03	-	3.0	
41/2																			1.5			2.1		3.2	
													٠.											3.4	
5																			1.6			2.3		-	-
51/2																						2.45		3.6	
6					٠.																-	2.59	3	3.8	50
												4	56	5	P		C.								

#### BENT WHIFFLETREE BOLTS.



	Length,	
Diam.	Inches.	Per 100
15-inch	3, 31/2, 4, 41/2500	6 \$12.50
	$3, 3\frac{1}{2}, 4, 4\frac{1}{2}, 5, \dots, 550$	

#### STOVE BOLTS.



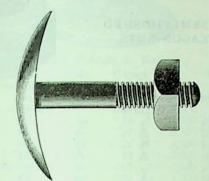


Cut Thread, Round Head. Cut Thread, Flat Head.

#### List Price per 100.

Length, Inches.	1/8	16	1/4	18	3/8
3/8		\$0.85			
1/2		.85	\$1.20		
5/8		.85	1.20		
3/4	\$0.85	.85	1.20	\$1.75	\$2.65
7/8		.90	1.25	1.80	2.70
1	.90	.90	1.30	1.85	2.75
11/8		.95	1.35	1.90	2.85
11/4	1.00	1.00	1.40	1.95	2,90
1%		1.05	1.45	2.00	3.00
11/2	1.10	1.10	1.50	2.05	3.10
13/4		1.15	1.55	2.15	3.20
2		1.20	1.60	2.30	3.40
21/4		1.25	1.70	2.40	3.60
21/2		1.30	1.80	2.50	3.80
23/4		1.40	1.90	2.60	4.00
3		1.50	2.00	2.70	4.20
31/4		1.60	2.10	2.85	4.40
31/2		1.70	2.20	3.00	4.60
33/4		1.80	2.30	3.15	4.80
4		1.90	2.40	3.30	5.00
41/4		2.00	2.50	3.45	5.20
41/2		2.10	2.60	3.60	5.40
43/4		2.20	2.70	3.75	5.60
5		2.30	2.85	3.90	5.80
51/4		2.40	3.00	4.10	6.00
51/2		2.50	3.15	4.30	6.20
53/4		2.60	3.30	4.50	6.40
6		2.75	3.45	4.70	6.60
	70.	-			
	10.				

#### "T" HEAD SHAFT BOLTS.



Length.	Diameter.	Per 100.
11/4-inch	13 and 1/4-in.	\$3.10
1½-inch	13 and 1/4-in.	3.20
1¾-inch		3.30
2 -inch	3 and 1/4-in.	3.40
21/4-inch	1 and 1/4-in.	3.50
	1 and 1/4-in.	3.60
	256 and 51 P. C.	

#### BOLT ENDS.



Size of		Wgt.	Price	Size of		Wgt.	Price
Iron,	Lgth.	per 100	per	Iron,	Lgth.	per 100	per
In.	In.	Bolts.	Lb.	In.	In.	Bolts.	Lb.
1/2	12	45	\$0.12	13/8	15	320	\$0.11
5/8 3/4 7/8	12	90	.10	11/2	16	940	.11
3/4	12	140	.10	15/8	17	1165	.12
7/8	12	212	.10	13/4	18	1405	.12
1	12	310	.10	17/8	19	1800	.12
11/8	13	420	.10	2	20	2045	.12
11/4	14	550	.11				
			552 I	P. C.			

#### TURN BUCKLES.



#### With Right and Left Stub Bolt End.

Diameter	Outside	Total Length.		
of	Length of	of Buckle with	Weight	List
Stub Ends.	Buckle.	Stub Ends.	Each,	Price,
Inches.	Inches.	Inches.	Lbs.	Each.
าร์ซ	71/8	22	11/4	\$0.38
3/8	71/s	22	11/2	.40
15 3/8 17 1/2 5/8 3/4 7/8	75	22	1	.42
1/2	71/2	22	21/4	.45
5/8	77/8	22	31/4	.50
3/4	81/4	23	41/4	.63
7/8	85/8	24	53/4	.75
1	9	25	71/4	.88
11/8	93/4	25	83/4	1.00
11/4	93/4	26	111/2	1.25
13/3	101/s	27	141/4	1.38
11/2	101/2	27	17	1.50
15/8	10%	28	191/2	1.75
13/4	111/4	28	25	2.00
17/8	115%	29	26	2.25
2	12	20	20	2.65

1-inch and smaller, 203 P. C. 11/8 to 13/8 inches, List. 11/2 to 13/8 inches, add 56 P. C. to List Price. 2 inches, add 201 P. C. to List Price.



#### HOT PRESSED NUTS.



Sc	luare.	U	. S. Stan	He	exagon.	
Size of Bolt.	Short Diam.	Thick- ness.	Square Blank, Per Lb.		Hexag'n Blank, Per Lb.	Tapped,
1/4" 15" 3/8" 15"	1/2" 32" 11" 38"	1/4" 56" 3/8" 16"	\$0.13 .12 .105 .10	\$0.15 .135 .116 .109	\$0.20 .18 .14 .13	\$0.22.5 20 .156 .143
1/2" 16" 5/8" 3/4" 7/8"	7/8" 3½" 1½" 1¼" 1½"	1/2" fe" 5/8" 3/4" 7/8"	.09 .09 .087 .085 .084	.097 .096 .092 .089 .088	.112 .112 .105 .10	.122 .121 .112 .106 .105
1 " 1½" 1¼" 1¾"	15/8" 11/8" 2" 21/8"	1 " 11/8" 11/4" 13/8"	.084 .084 .084 .085	.088 .088 .088	.099 .099 .099 .10	.105 .105 .105 .107
1½" 15%" 1¾" 17%"	2%" 2%" 2¾" 218"	1½" 15%" 1¾" 1½"	.088 .09 .093 .095	.094 .097 .010 .103	.010 .105 .108 .011	.111 .114 .117 .012
2 " 2½" 2½" 2½" 2½"	3½" 3½" 3½" 3½" 3½"	2 " 2½" 2½" 2½" 2½"	.097 .010 .010 .103 .105	.106 .011 .111 .115 .118	.112 .117 .117 .122 .124	.123 .129 .130 .136 .139
2 <sup>3</sup> / <sub>4</sub> " 3 "	4½" 4½"	2 <sup>3</sup> / <sub>4</sub> " 3 "	,110 ,115	.124	.130 .135	.146 .152

Hexagon Nuts, Blank and Tapped, List. Oversize Nuts, 18 and smaller. Extra, per lb......\$0.02 Special prices on keg lots of one size. In ordering Nuts, state whether Square or Hexagon, Blank

Square Nuts, Blank and Tapped, 26 from List.

or Threaded, Exact or Over-size, for what Size Bolt.



#### MACHINE SCREW NUTS.

Iron and Brass.



Square.		Price per	Gross.	He	xagon.
		Square	Hexagon	Square	Hexagon
No.	Threads	Iron	Iron	Brass	Brass
4	36	\$0.23	\$0.36	\$0.72	\$1.08
6	32	.23	.36	.72	1.08
8	32	.26	.40	.80	1.22
10	32&24	.29	.43	.87	1.30
12	24	.32	.48	.94	1.44
14	20 & 24	.36	.55	1.08	1.66
16	18&20	.48	.72	1.44	2.16
20	16&18	.82	1.22	2,45	3.67
24	16	1.06	1.58	3.17	4.75

Note.-We list these per gross, in which way they are packed, same as Machine Screws.

Unless otherwise specified Iron Nuts will be furnished.

Iron, 201 P. C.

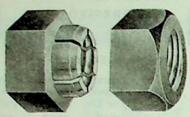
Brass, 106 P. C.

#### SQUARE STOVE BOLT NUTS.

Price per 100	\$0.20	\$0.28	\$0.50	\$0.64
No. of Threads	24	18	18	18
Diam. of Bolt	Jg."	1/4"	ra"	3%"

103 P. C.

#### DRAKE LOCK NUTS.



Made from special screw stock steel, turned from the solid bar. Locks the dead member not the moving member. Have remained tight after the most severe strain and vibration, on 3-inch piston air drills. Ship'g Hexagon

tion, on 3-inch p	iston air	drills.	Ship'g	]	Hexagon
T	J. S. F.	Total	Weight		Steel
Bolt Standard	Threads	Height	in Lbs.		Special
Size. Hexagon.	per	of	per	Boxed.	Screw
ACC.	Inch.	Nut.	100		Stock,
			Nuts.		per 100.
1/4 S. A. E	28	32	2	100	\$ 4.00
U. S. S	20	35	4	100	4.50
1 S. A. E	24	76	21/2	100	4.50
U. S. S	18	26	5	100	5.00
% S. A. E	24	1/2	3	100	5.00
U. S. S	16	5/8	61/2	100	6.50
7. A. L. A. M.	20	35	5	100	6.50
U. S. S	14	11	9	100	7.50
1/2 S. A. E	20	31	7	100	8.00
U. S. S	13	18	13	100	9.00
1 S. A. E	18	38	101/2	100	10.00
U. S. S	12	7/8	17	100	11.00
% S. A. E	18	18	16	50	12.00
U. S. S	11	32	24	50	13.00
% A. L. A. M.	16	1	21	50	16.00
U. S. S	10	132	37	50	17.00
7/8 S. A. E	14	132	30	50	21.00
U. S. S	9	15	52	50	24.00
1 S. A. E	14	132	51	50	32.00
U. S. S	8	176	75	50	35.00
	1/4 to 18				
		inch to			

% to 1 inch, 101 P. C. Assortment No. 1, S. A. E.

	-											
1/4-inch		 								,		5
is-inch		 										15
3/s-inch												
7.inch												30
1/2-inch												

Shipping weight, 4 pounds. 100 List, \$5.85
Assortment No. 2, S. A. E.

78-Incn.					٠			٠		٠		٠	٠	28
i-inch.														24
1/2-inch.														20
fe-inch.														17
%-inch.														8
3/4-inch.														3

Shipping weight, 7 pounds.	100	List,	\$7.80
Assortment No. 3, U. S. S.			
%-inch			
7e-inch	20		
1/2-inch	40		

/2-IIICII	. 10	
	-	
Shipping weight, 11 pounds. Assortment No. 4, U. S. S.	100	List, \$7.70

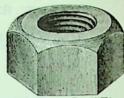
Ht 110. 1, C.	D. D.	
7-inch		10
	*	
%-inch		15
%-inch		5

	The state of the s
Shipping weight, 14 pounds.	100 List, \$9.00
Assortment No. 5, U. S. S.	

nt No. 5,	L	J.	В	0	0								
%-inch													20
3/4-inch													15
%-inch													10
1 -inch													5

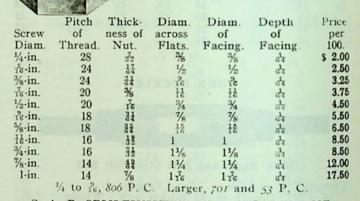
Shipping weight, 20 pounds. 50 List, \$9.30

## U. S. SEMI-FINISHED HEXAGON NUTS.



				Make Sales and A	
Size		Thick	ness	Number	Semi-Fin-
	***				
of	Diameter.	Standard	Jam.		hed Nuts
Bolt.		V Thread		Threads F	rice each.
	1/		-3	20	\$0.02
1/4	1/2	1/4	16		
700	48	Ye	372	18	.025
3/	11	34.	1/4	16	.0325
78	16	% 76	/4		
1.0	3.5	76	16	14	.0375
1/2	7/9	1/0	250	13 or 12	.045
9	31	1/2 16	11	12	.055
16	32	16	32		
5/8	110	5/8	3/8	11	.065
1/4 1/5 1/5 1/5 1/5 1/5 1/5 1/5 1/5 1/5 1/5	11/4	3/4	7,	10	.085
71		7/	1/	9	.12
1/8	170	7/s	1/2		
1	15/8	1	re	8	.175
11/s	118	11/8	5/8	7	.24
178			78		
11/4	2	11/4	3/4	7	.33
13/8	216	1%	12	6	.49
11/2	23/8	11/2	7/	6	.69
172	278		7/8		
1%	276	. 1%	18	51/2	.93
13/4	23/4	13/4	1	5	1.30
			11	5 .	1.70
1%	218	1%	116		
2	31/8	2	11/8	41/2	2.15
Sizes 1		and ros P	C Lar	ger, 602 and	108 P. C.
Diecs ,	4 60 16, 731				100
		Jam Nuts.	300 P.	C.	

### S. A. E. PLAIN SEMI-FINISHED NUTS.



#### S. A. E. CASTELLATED NUTS.

4			Diam.	No.	Diam. of		
	Pitch	Total	of Nut	of Slots	Cotter		
Screw	Thread	Thick-	Across	in	Pin		ice,
Diam.	Nut.	ness.	Flat.	Castle.	Used.	per	100.
1/4-in.	28	32	3/8	6	10	1001	\$ 2.00
ie-in.	24	31	1/2	6	16	1206	2.50
3/8-in.	24	32	Ye	6	32	1502	3.25
re-in.	20	33	11	6	32	1907	3.75
1/2-in.	20	1°	3/4	6	32	2303	4.50
re-in.	18	35	7/8	6	1/8	3208	5.50
%·in.	18	33	18	6	1/8	4302	6.50
3/4-in.	16	18	11/8	. 6	1/8	6006	8.50
%-in.	14	38	11/4	6	1/4	8001	12.00
1-in.	14	1	176	6	1/4	12508	17.50

#### WROUGHT WASHERS.



200	Por	nde	in	Keg.
200	FOL	mus	111	Leg.

		200 1 04	indo in in	-6.		
Size of	Width,	Hole,	Gauge	No.	In 5-1	Lb. Box,
Bolt.	Inches	. Inches	No.	100 Lbs.	per	pound.
ra-inch	10	1/4	18	39,400	\$	0.14
1/4-inch	3/4	re	16	13,900	116	.12.2
15-inch	7/8	3/8	16	11,250	108	.11.4
3/8-inch	. 1	16	14	6,800	91	.10.5
17g-inch	11/4	1/2	14	4,300	85	.09.8
1/2-inch	13/8	16	12	2,600	82	.09.4
18-inch	11/2	5/8	12	2,250	71/28	.09.3
%-inch	13/4	11	10	1,300	71/23	.09.2
3/4-inch	2	18	10	1,010	77	.09.1
%-inch	21/4	18	9	860		.09
1 -inch	21/2	118	9	625		.09
11/s-inch	23/4	11/4	9	520		.09
11/4-inch	. 3	13/8	9	403		.09.2
1%-inch	31/4	11/2	8	320		.09.2
1½-inch	31/2	15/8	8	278		.09.2
15%-inch	33/4	13/4	8	247		.09.5
13/4-inch	4	17/8	8	224		.09.5
1%-nich	41/4	2	8	200		.09.5
2 -inch	41/2	21/8	8	180		.09.5
000	Special	prices for	and the same of the same of		ize.	
	opeciai	prices for	1108 1003	o. one	7 7	

#### RIVETING BURRS.



For Rivets.		Packed in 1-pound papers.		
is-inch.	Per	pound	247	\$0.46
1/4-inch.	Per	pound	229	.42

#### THIN STEEL OR TIRE BOLT WASHERS.

Packed in 1-pound papers.

For Bolt.	No. to Pound.			
1/8-inch.	2000	Per	pound261	\$0.40
re-inch.	1100	Per	pound243	.35
1/4-inch.	800	Per	pound225	.30

#### CAST BEVEL WASHERS.



For	%-inch	Bolt.	Per	100	pounds\$1	10.00

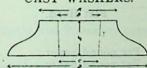
### MALLEABLE IRON WASHERS.





Diameter,	Thickness,	Size of	Weight,	Per
Inches	Inches.	Bolt.	Ounces.	Pound.
21/2	1/4	1/2"	11/2	\$0.10
23/4	750	5/8"	31/2	.10
3	70	3/4"	51/4	.10
31/2	76	7/8"	8	.10
4	1/2	1"	11	.10

#### CAST WASHERS.



	4	- 0 -	Contract Con	
Diameter,	Thickness,	Size of	Approximate	Per
Inches.	Inches.	Bolt.	Weight per 100	pound.
3	5/8	5/8"	75 Lbs.	\$0.07
3	3/4	3/4"	90 Lbs.	.07
31/2	7/8	7/8"	150 Lbs.	.07
41/2	1	- 1"	260 Lbs.	.07

#### LIGHT LOCK WASHERS.



Size Bolt.	Size Steel.	Per 1000
18-inch		\$ 1.35
1/4-inch	dax fo	2.70
fe-inch		5.00
3/8-inch		5.70
ra-inch		9.70
1/2-inch		10.35
16-inch		13.35
5/8-inch		14.35
3/4-inch		19.70
When ordering	less than 1000, add 50%.	
THE TEN	706 P. C.	

#### HEAVY LOCK WASHERS.

Size Bolt.	Size Steel.	Per 1000
7g-inch		\$11.00
1/2-inch		11.70
%-inch		15.35
%-inch		16.35
3/4-inch	¼x¼	22.35
%-inch		26.70
1-inch		37.35
	sor P C	

Less than 1000, add 50%.

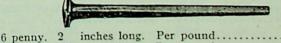
#### LOCK WASHER ASSORTMENT.



No. 5. Contents.

	Size S	Steel.	
Quantity.	Size.	Width.	Thickness.
100	16	16	234
100	1/4	24	18
100	16	1/8	32
100	3/8	1/8	32
40	16	11	1/8
40	1/2	11	1/8
20	16	13	32
20	5/s	13	32
10	3/4	1/4	- 10
o 5 Assortmen	nt Price eac	h	2006 \$4.00

#### WROUGHT CLINCH NAILS.



6 penny	2	inches	long.	Per	pound	\$0.10
8 penny.	21/6	inches	long.	Per	pound	.09
10 penny.	3	inches	long.	Per	pound	.08
to penny.	-			arket		

### WAGON NAILS.



Siz

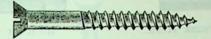


Cou	ntersunk	Slot	Head.		cone		Barbed.	
e:	1/s-inch. 1/s-inch. 1/4-inch.	11/4	and 11/2	inch	es los	ng. Pe	er lb	 .15

Market.

THE CAMPBELL IRON		A STATE OF THE PARTY OF				SS A	/E., S	T. LO	UIS.	No. 26-1	USAC
CIGHT LOCK WASHERS	IRO	N MAC	HINE	SCRE	WS.	HERE	WAS	тнопо	WR		
							-		mm	m	
Round Head.			at Head					Fillister	Head.		
Nos. Threads	2 56	List Pri 3 48	ce, per 4 36&40	6 32	8 32 2	10 4&32	12 24	14 20&24	16 18&20	20 16&18	24 16
Length, Inches.	\$0.30	\$0.30	\$0.30	\$0.35	\$0.40						
16. 14.	.30	.30	.30	.35	.40	\$0.60	\$0.70	\$0.85			
18. 3/s.	.32	.32	.32	.37	.44	.65	.75 .75	.90	\$1.15 1.15	\$1.90	\$2.3
1/2.	.34	.34	.34	.39	.48	.70	.80	.95 .95	1.20 1.20	2.00	2.4
%	.37	.37	.37	.42	.52	.75	.85	1.00	1.25	2.10	2.5
3/4	.37	.37	.37	.42	.52 .56	.75	.85	1.00	1.25	2.10	2.6
7/8	.45	.45	.45	.50 .55	.60	.85 .90	.95	1.15	1.40	2.30	2.7
1/8			.55	.60	.70	1.00	1.00	1.25 1.35	1.50 1.60	2.40 2.60	3.0
1/4. 3/8.			.60 .65	.65	.75	1.10	1.20	1.45 1.55	1.75	2.80 3.00	3.4
½			.70	.75	.85	1.30	1.40	1.65	2.10	3.20	3.6
2			.90 1.10	.95 1.15	1.05	1.50	1.60	1.85 2.20	2.50	3.60 4.00	4.2
2¼. 2½.				1.25	1.45	1.90	2.20 2.50	2.60	3.30	4.40	4.8
28/4					1.90	2.50	2.90	3.20	4.00	5.40	5.9
Round and	l Flat	Head Ir	on Mac	hine Sc	2.30 rews. 556	2.90 P. C.	3.50	3.80	4.50	6.00	7.4
Fillist	ter Hea	d Iron	Machine	Screws	, 102 P. (	c.					
	"	Ve do no	ot break	boxes.		6	-mm	mm	m		
						7	IIIII	mm			
	BRA	SS MA	CHINE	SCRE	WS.	5			,,,		
Flat Head.		List Pri	ce ner	Gross			Round	Head.		WHIT	
Nos	2	3	4	6	8	10	12	14	16	20	24
Threads Length, Inches.	56	48	36&40	32	32 2	4&32	24	20&24	18&20	16&18	16
1/s.	\$0.32 .32	\$0.32 .32	\$0.36	\$0.46 .46	\$0.70 .70	\$1.00			:	·	
1/4	.32	.32	.36	.46	.70	1.00	\$1.25	\$1.65			
fe	.34	.34	.38	.49	.75	1.05	1.35 1.45	1.75 1.85	\$2.90	\$4.60	\$5.5
ŢĠ	.38	.38	.42	.55	.85	1.15	1.55	2.00	3.05	\$4.60 4.80	5.6
½	.40	.40	.44	.58	.90 .95	1.25 1.35	1.65 1.75	2.15 2.30	3.20	5.00	5.7 6.3
5/8	.46	.46	.50	.66	1.00	1.45	1.85	2.45	3.35	5.25 5.50	6.5
<sup>3</sup> / <sub>4</sub>	.52	.52	.56 .62	.74	1.10	1.65	2.05	2.75 3.05	3.80 4.10	6.00	6.7
1			.70	.90	1.30	2.05	2.45	3.35	4.40	7.00	8.5
1½. 1¼.			.80	1.05	1.45	2.20	2.65	3.55	4.65	7.50	9.0
3/8			1.00	1.35	1.75	2.50	3.05	3.95	5.20	8.00 8.50	11.5
13/4			1.10	1.50	1.90 2.30	2.65	3.25 3.75	4.15	5.50 6.20	9.00	12.0 12.7
2			1.70	2.30	2.70	3.45	4.25	5.15	7.00	10.00	13.5
2 <sup>1</sup> / <sub>4</sub>				2.70	3.10	3.85 4.65	4.75 5.80	5.65 6.80	8.00 9.00	12.00	14.9 15.5
2¾						6.00	7.00	8.00	10.00	13.50 15.00	17.0
3		4	52 P. C.			7.50	8.50	9.50	11.00	16.50	19.0
WIRE BRADS.	V	Ve do n	ot break	boxes.		-					
						V		NAILS.			
O TOTAL DE LA COLONIA DE LA CO							Flat I	read.			
Length. Gauge. %-inch. No. 19. Per pound paper		. \$0.65		Length.		p.					
34-inch. No. 18. Per pound paper		52		74-Inch.	No. 19. No. 18.	Per 1	oound 1	oaper.			\$0.6
%-inch. No. 18. Per pound paper		45		/g-inch.	10. 18.	Per I	oound 1	aper			.45
1 -inch. No. 16. Per pound paper		36	, 1	-incn.	No. 17. No. 16.	Per 1	oound 1	naner			.36
1½-inch. No. 16. Per pound paper			. 1	74-1HCH.	190. 10.	Per 1	oound 1	aner			.34
	The state of the state of		Market	, and it	No. 15.	r er I	Jound 1	paper			.31

WOOD SCREWS.



Flat Head Bright and Round Head Blued.

DRIVE SCREWS.

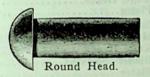


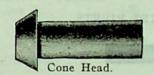
Length, inches	3/4	7/8	1	11/4
Gauge No. 8; Per Gross	\$1.10	\$1.15	\$1.20	\$1.30
Gauge No. 9; Per Gross	1.15	1.20	1.25	1.35
Gauge No. 10; Per Gross	1.20	1.25	1.30	1.40
he.	PC			

n.		n	^
Pri	ce	Per	Gross.

	0	1	2	3	4	5	6	7	8	9	10	11	12	14	16
1/4	\$0.90	\$0.90	\$0.90	\$0.90	\$0.90										
3/6	.90	.90	.90	.90	.90	\$0.90	\$0.90	\$0.90	\$0.90						
1/2		.90	.90	.90	.90	.90	.90	.95	1 00	\$1.05	\$1.10				
5/8			.90	.90	.90	.95	.95	1.00	1.05	1.10	1.15	\$1.20	\$1 25		
3/4			.90	.90	.95	.95	1 00	1.05	1.10	1.15	1.20	1.25	1.30	\$1.40	
7/8				.95	.95	1.00	1 05	1.10	1.15	1.20	1.25	1.30	1.35	1.50	
1				.95	100	1.05	1.10	1.15	1.20	1 25	1.30	1.35	1 40	1.60	\$1.85
11/4					1.10	1.15	1 20	1.25	1.30	1 35	1.40	1.50	1.60	1.80	2 05
11/2					1.20	1.25	1.30	1.35	1 40	1.45	1 50	1.60	180	2.05	2.35
13/4							1 40	1.45	1.50	1.60	1.70	1.80	2.00	2.25	2.60
2							1.55	1 60	1 65	1.75	1 85	2.00	2 20	2.50	2 90
21/4							1.75	1.80	1.85	1.95	2.05	2.20	2.40	2.75	3 20
21/2		1 1 1 3 3		10000		12.00	1.95	2 00	2 05	2.15	2 25	2.40	2.60	3.00	350
23/4									2.15	2.25	2.45	2.60	2 80	3.25	3.87
3									2 45	2.55	2 65	2.80	3.00	3.50	4.10
31/2								f			3.00	3.20	3 40	4.00	4.60
4				- Mining								and the	3.80	4.50	5.20
41/2													0.00	5.10	5.90
										1000				0.10	0.00
Brig	ght Wo	ood Sc	rews, d	SOI P.	C.				Blu	ied Wo	od Scre	ws, 603	P. C.		

STRUCTURAL AND BOILER RIVETS.





ROUND OR BUTTON, CONE, FLAT, WAGON BOX, FLAT, COUNTERSUNK PAN AND TRUSS HEADS.

Length, Inches—List Price per Lb. in 200-lb. Kegs.

	33/4	21/4	. 1	7/8	5/8					28,811	E SIN	ARTS	CATH	13990		_
Diameter	to 6	to 31/2	to 2	and 3/4	and 1/2	16	%	33	1g	32	1/4	32	16	32 -	1/8	32
78 and 3/8				\$0.151/2	\$0.16 \$	0.17	\$0.18	\$0.19	\$0.20	\$0.20						
14 and 16	.181/2	.171/2	.151/2	.16	.161/2	.17	.18	.19	.20	.20						
\$2	.19	.18	.16	.161/2	.17	.19	.19	.19	.20	.20	\$0.20	\$0.21				
1/4	.19	.18	.16	.161/2	.17	.19	.19	.19	.20	.20	.20	.21	\$0.21			
da	.22	.20	.17	.171/2	.18	.20	.20	.20	.21	.22	.22	.23	.23	\$0.24	\$0.24	\$0.25
Ŷa	.22	.20	.17	.171/2	.18	.20	.21	.21	.22	.22	.23	.24	.25	.26	.27	.28
£2			.18	.181/2	.19	.21	.22	.22	.23	.23	.24	.25	.26	.27	.28	.29
1/		.211/2		.211/2	.22	.26	.29	.30	.32	.33	.33	.35	.39	.42	.44	.47
£			.26	.261/2	.27	.32	.36	.37	.39	.41	.42	.43	.47	.52	.57	.62

#### LIST EXTRAS

		EXTRAS	- CONTRACT
100-1ь.	Kegs	Add 1 cent	to List
50-16.	Boxes	Add 3 cents	to List
25-lb.	Boxes	Add 4 cents	to List
5 or 10	lb. Pkgs	Add 5 cents	to List
1-lb. P	kgs	Add 8 cents	to List
	mediate lengths and	diameters take list price of	of near-

For sizes not listed and rivets smaller than above, prices on application.

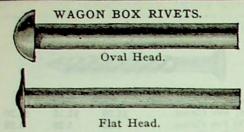
it and smaller, 501 P. C.

1/2 and larger 3301 per 100 lbs. Base.

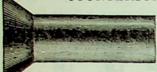
#### RIVETS.

	Round Head	Cone Head	Countersunk Head
Over 1¼" diameter,			
Over 5 in. in length	\$0.50	\$0.60	\$0.85
34" to 114" diameter,			
2" to 5" length	Base	.10	.35
Between 1" and 2" length,			THE RESERVE
Over 5" length	.25	.35	.60
1" and under in length	.50	.60	.85
%" dia., 2" to 5" length	.15	.25	.50
Between 1" and 2" length,			
Over 5" length	.40	.50	.75
1" and under in length	.65	.75	1.00
1/2" dia., 2" to 5" length	.50	.60	.85
2" to 5" in length,			
Over 5" in length	75	.85	1.10
1" and under in length	1.00	1.10	1.35

For Rivets packed 100 lbs. in keg, add 10c to above extras. For less than 100 lbs. of a size, add 50c to above extras.



### COUNTERSUNK HEAD RIVETS.



	-1-inch.	.\$0.21
	-1-inch.	
Per	pound	201/2
	501 P. C.	

#### WHEEL OR FLANGE RIVETS.



No. of flange.	Le	ngth.	Diameter.	Per Lb.
0	138	inches,	32-inch,	\$0.21
3	13/4	inches,	32-inch,	.21
9	118	inches,	al-inch,	.20
13	2	inches,	₹-inch,	.20
17	21/8	inches,	0 =	36 .20
21	218	inches,	32-inch,	.20
25	21/4	inches,	re-inch,	.191/2
33	$2\frac{3}{8}$	inches,	re-inch,	.19
45	21/2	inches,	3/8-inch,	.19

#### BOW SOCKET RIVETS.



3/4 x 3/2 -inch.	Per	pound222	\$0.21
8/4 x 1/4-inch.	Per	pound226	.21

#### COPPER RIVETS AND BURRS.



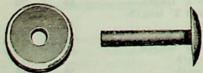
boxes.

Rivets, and Burrs, assorted, put up in one-half pound

No. 8. %-in. to %-in. Per one-half lb. paper....401..\$0.50 No. 9. %-in. to %-in. Per one-half lb. paper....403....50 Rivets and Burrs, assorted, put up in one-fourth pound packages:

No. 8. %-in. to %-in. Per one-fourth lb. paper...223...\$0.25 No. 9. %-in. to % in. Per one-fourth lb. paper...226....25

### CALIFORNIA TIRE RIVETS AND BURRS.



Size.	L	ength. Per	Pound.
1/4-inch.	1%, 2, 21/4, 21/2	inches202	\$0.22
fe-inch.	2, 21/2, 3, 31/2	inches196	20

#### SECTION AND GUARD RIVETS





Countersunk Head.

Bung or Oval Head.

Put up	in	1-Pound	Packag	es.
--------	----	---------	--------	-----

No. 6. Diameter %, 16, 1/2, %, 1/4, 1/8, 1, 1/8, and 1/4	
inches. Per pound162	\$0.21
No 51/2. 3/8, 70, 1/2, 5/8, 5/4, 7/8, 1, 13/8 and 11/4 inches.	
Per pound	
No. 5. 3/8, 175, 1/2, 5/8, 3/4, 7/8, 1, 11/8 and 11/4 inches.	
Per pound	.21

Per pound	166 .21
No. 5. %, 1/2, 1/2, 5/8, 3/4, 7/8, 1, 11/8 and 11/4 inc	hes.
Sizes of Rivets Used for Different Mac	chines.
Mower Sections	. ½x5½ Oval.
Knife Heads	. 3/4 x5½ Oval. .11/8 x6 C. S.
Buckeye:	.17840 C. D.
Mower Sections	. ½x6 C. S. 3/8x6 C. S.
Binder Sections.  Knife Heads.	. 3/8x6 C. S.
Plates	. 3/4 x 6 C. S. 1.1/8 x 6 C. S.
Champion:	
Mower Sections.  Binder Sections.	. ½x5½ C. S.
Knife Heads	. 3/4 x51/2 C. S.
Plates	.1 x6 C. S.
Deering: Mower Sections	. ½x6 Oval.
Binder Sections	3/8x6 Oval.
Knife Heads	. %x6 Oval. .1½x6 C. S.
McCormick—Previous to 1905:	.1/240 C. O.
Mower Sections	½x5½ C. S.
Binder Sections	. 3/8×6 C. S.
Plates	.1¼ x6 C. S.
McCormick-1905 and since:	
Mower Sections	7/2 x 5 1/2 Oval
Binder Sections	. 3/8x6 C. S.
Plates	.11/4 x6 C. S.
Milwaukee: Mower Sections	. 1/2x6 Oval.
Binder Sections	. 3/8x6 Oval.
Knife Heads	. 7/8x6 Oval.
New Minnie:	.174 x0 C. S.
Mower Sections	
Binder Sections.  Knife Heads.	. 15 x7 C. S.
Plates	. 11/8x6 C. S.
Osborne:	
Mower Sections	
Binder Sections	
Plates	
Plano: Mower Sections	. ½x6 C. S.
Binder Sections.	. 10x6 C .S.
Knife Heads	. 3/4x6 C. S.
Plates	.1/8x6 C. S.
Iron Ditmon Mower	

Mower Sections	J. v6 (	C S	S
Knife Heads			
Plates	11/4 x51/2	C. \$	S
W. 1 Di. 34			

wood Pitman Mower.	
Mower Sections	1/2x6 Oval
Knife Heads	7/8x6 Oval
Plates	11/4 x51/2 C. S.
od:	

Wood:		
Mower Sections	1/2×6	C. S
Binder Sections	Tax6	C. S
Knife Heads	3/4x6	C. S
Plates	11/sx6	C. S



For Attaching Brake Lining.

			-						
This i	s a co	ounter	sunk h	ead co	pper	Rivet,	designe	d esp	ecial-
ly for I	Brake	Bane	d Linin	g. In	one	-pound	boxes,	no E	Burrs.
No. 8.	1/2,	1/8, 3/4	inches	long.	Per	lb	75	56	\$ .50
No. 9.	1/2,	1/8, 3/4	inches	long.	Per	lb	75	52	55
No. 10.	1/2,	5/8, 3/4	inches	long.	Per	lb	73	58	57
No. 12.	1/2,	1/8, 3/4	inches	long.	Per	lb	73	51	61

STEEL CLINCH RIVETS.

Furnished in cartons which contain 12 small boxes of 50 rivets each. 5-16 6-16 8-16 10-16 12-16 .....\$1.44 1.92 1.68 1.68 1.92 Per Carton .. 501 P. C

### BRASS CLINCH RIVETS. For Leather Clutch Facings.

100	in Carton	n.			
Size, inches	15		1/2		5/8
Price Per 100 254	\$0.50	356	\$0.70	408	\$0.80

#### STEEL BALLS.



These are A-Grade first quality Balls, guaranteed to be accurate in size.

Sizes.	Price per 100	Price per 10	0
1/s-inch	\$0.30	3/s-inch 702 \$2.0	0
352-inch		17s-inch 2.80	0
ra-inch		1/2-inch	0
372-inch		fe-inch 5.60	0
1/4-inch		%-inch 6.80	0
		†å-inch 8.00	0
	1.20	3/4-inch 9.60	3
	Full Boxes.	501 P. C.	

Broken Boxes, 106 P. C.

### STANDARD STEEL TAPER PINS.



Taper One Quarter Inch to the Foot. No. 3 Diam, at Large End .156 .172 .193 .219 .250 .289 .341 .409 Approx.) 11" 16" 372" 14" 13" 13" 1/2" Fract'l Sizes. List Price per 100 ......\$1.80 \$2.00 \$2.10 \$2.30 \$2.50 \$2.75 \$3.00

3.25 \$3.75 2.05 2.25 2.35 2.55 2.75 3.00 2.60 3.25 3.50 4.00 \$4.65 2.30 2.50 2.80 3.00 4.25 ..... 2.55 5.00 3.25 3.50 3.75 2.75 2.85 3.05 ..... 2.80 5.40 3.00 3.10 3.30 3.50 3.75 4.00 4.50 3.25 3.35 3.55 3.75 4.35 5.80 4.75 3.80 4.00 4.40 3.60 4.75 5.20 5.75 6.75 4.25 4.05 7.25 4.30 4.50 5.10 5.70 6.25 7.80 4.55 4.75 5.45 6.75 7.25 8.40 7.75 9.00 7.25 7.75 8.25 9.60 8.75 10.20 8.25 In giving sizes other than those included in list, measure

259 P. C.

at largest point.

SQUARE HEAD SET SCREWS.



dened Cun Doint

	U. S. Thread, Ca	se Hard	ienea, C	up Pon	III.					
Length.		Per 10	00.		Diam	eter of			~	
Under head to extreme point.	1/4"	18"	3/8"	16"	1/2"	16"	5/8"	3/4"	7/8"	1
1/2	\$ 1.80	\$ 2.00	\$ 2.35							
*/	1 00	2.10	2.45	\$ 2.80	\$ 3.30					
3/.	2.00	2.20	2.50	2.90	3.40	\$ 5.00	\$ 5.00			
7/4	2 10	2.30	2.60	3.00	3.60	5.50	5.50			
78	0.15	2.35	2.65	3.10	3.80	5.75	5.75	\$10.00		
11/	2.20	2.50	2.85	3.50	4.30	6.50	6.50	11.00	\$15.50	
11/4	0.50	2.70	3.10	4.00	4.80	7.25	7.25	12.00	16.20	\$22.00
1/2	0.77	3.00	3.50	4.50	5.40	8.00	8.00	12.80	17.70	24.00
1%	3.25	3.50	4.00	5.15	6.00	8.80	8.80	13.60	19.20	26.00
2,		4.00	4.50	5.75	6.75	9.60	9.60	14.50	20.70	28.00
21/4	3.75	4.50	5.00	6.35	7.50	10.40	10.40	15.40	22.20	30.00
21/2	4.25		5.50	6.75	8.25	11.20	11.20	16.30	23.70	32.00
2¾	4.75	5.00		7.20	9.00	12.00	12.00	17.30	25.20	34.00
3	5.25	5.50	6.00	7.60	9.75	12.75	12.75	18.40	26.70	36.00
31/4				2.75		13.50	13.50	19.50	28.20	38.00
3½				8.00	10.50		14.30	20.75	29.70	40.00
3¾				8.50	11.25	14.30		22.00	31.20	42.00
4				9.00	12.00	15.10	15.10		-	10.00
					-			10	0	8
Threads to Inch	20	18	16	14	12	12	11	10	9	0

703 P. C No. 17 Set Screw Assortment:

100 Assorted Square Head.

. HEXAGON HEAD CAP SCREWS.



Standard U. S. Thread, Case Hardened. Price per 100.

		II.	ice	ber 1	00.									
Length, Inches.							Dia	meter	of Scr	ew:				
Under head to extreme point.	1/4"	15	,	3/8"		10"	1/2"	2"		3/4"	7/."	1"	11/."	11/."
						Dallan a La								
3/4					2	4.50								
7/s	3.1	3.4	ю	3.90		4.70	5.80							
1	3.2	3.5	50	4.00		4.90	5.90	\$ 9.25	\$ 9.25					
11/4	3.50	3.7	75	4.25		5.30	6.50	9.50	9.50	\$12.50				
11/2	3.75	THE RESERVE		4.50	-	5.70	7.10		10.00	A STATE OF THE PARTY OF	\$18.40			
	Table 1		0.0			No. of Contract of					A TO COMPANY			
13/4	4.00	The state of the s		4.85		6.10	7.70		10.75	14.50		\$22.75		
2	4.2			5.20		6.50	8.30	11.50	11.50	15.50	21.00		\$34.00	\$38.50
21/4	4.70	5.3	35	5.55		7.15	8.90	12.60	12.60	16.50	22.40	27.25	36.75	42.00
21/2	5.25	5.8	80	6.00		7.50	9.50	13.60	13.60	17.50	23.70	29.50	39.50	45.50
	5.78			6.65		7.90	10.10			19.00		31.75	42.25	49.00
2¾														
3	6.2	6.8	SU	7.20		8.40	10.70	ALC: UNKNOWN	15.20	20.60	26.40	34.00	45.00	52.50
31/4						9.15	11.50	16.00	16.00	22.10	28.20	36.25	47.75	56.00
31/2						9.75	12.30	17.30	17.30	23.70	30.00	38.50	50.50	59.50
38/4						10.50	13.10	18.60	18.60	25.30	31.80	40.75	53.25	63.00
4						11.10	13.90	19.90	19.90	26.90	33.60	43.00	56.00	66.50
									21.20			45.25	58.75	70.00
41/4														
41/2				• • • • • •					22.50			47.50	61.50	73.50
43/4										31.70	39.00	49.75	64.25	77.00
5									27.0		40.80	52.00	67.00	80.50
0						on the s	-0.5	20.0	00.0	00000				
m 1 1 1	20	18	,	16		14	12	10	11	10	9	8	7	7
Threads to Inch	20	10	,	10		14	12	12	11	10	9	0	-	
½ to ¾ d	ia., 70	I and	10	03 P. (	C.	1/s an	d larg	ger, 70	P. C.					
								00.1						
CAD SCREW ASSORTMENT							(	TADS	PEW	ASSO	PTMI	TNT		

### CAP SCREW ASSORTMENT.

No. 14.

Standard Thread:

Size, 1/4 x 1/2, 3/4-inch. 16 x3/4, 1-inch.

3/8 x 3/4, 1, 11/4 and 11/2-inch.

76 x34, 1 and 11/4-inch.

1/2x 1, 11/4 and 11/2-inch.

## CAP SCREW ASSORTMENT. No. 15.

100 Assorted Standard Thread, as follows:	
Size	2"
Quantity 4 6 6 6 6 6	6
Size $\frac{3}{8}$ x1"- $\frac{11}{4}$ "- $\frac{11}{2}$ "- $\frac{13}{4}$ "- $\frac{2}{16}$ x1"- $\frac{11}{2}$ "	4
Quantity 4 6 8 3 4 3 3	
Size	2"
Quantity 4 3 4 2 2 4	4
Size	
Quantity 2 2 2	
No. 15. Assortment. Price, each	00

#### S. A. E. CAP SCREWS.



Length, Inches.				Dia	meter	of Scre	ew:			
Under head to extreme point.	1/4"	15"	3/8"	10"	1/2"	16"	5/8"	11"	3/4"	7/8"
3/4	3.45	\$ 4.10	\$ 4.70	\$ 6.50	\$ 7.00					
78	 3.65	4.30	4.90	6.60	7.20					
1	 3.85	4.50	5.10	6.80	7.40					
11/4	4.10	4.80	5.35	7.35	8.15	\$11.90				
11/2	4.40	5.10	5.65	8.00	8.90	12.50	\$14.70	\$16.90		
1%	4.70	5.45	6.05	8.65	9.65	13.45			\$24.65	
2	5.00	6.05	6.50	9.25	10.40	14.40	16.90		26.25	
21/4	5.90	6.70	6.95	10.05	11.15	15.75	18.20	20.65	28.00	34.10
2½	6.55	7.25	7.50	10.65	11.90	17.00	19.45	21.90	29.65	36.90
2¾	7.20	7.90	8.30	11.25	12.60	18.00	20.90	23.80	31.25	39.70
3	7.80	8.50	9.00	11.95	13.40	19.00	22.40		33.00	42.50
3¼				12.90	14.40	20.00	23.90	27.65	35.25	45.35
3½				13.80	15.40	21.65	25.65	29.65	37.50	48.15
3¾				14.75	16.40	23.25	27.45	31.65	39.75	50.95
4	 			15.65	17.40	24.90	29.25	33.65	42.00	53.75
mi le se Tech	00	-01								14
Threads to Inch	 28	24	24	20	20	18	18	16	16	14

701 and 103 P. C.

#### CAP SCREW ASSORTMENT. No. 16.

75 Assorted S. A. E. Thread, as follows:

$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$1\frac{1}{4}$ "— $1\frac{1}{2}$ "— $2$ " $2$ $3$ $3$
No. 16. Assortment. Price, each		1506 \$3.00

#### SPRING COTTERS.



Diam'r, Inches 1-32 Wire Gauge 22	1-16 16	5-64 14½	3-32 13	7-64 12	1-8	9-64 10	5-32	11-64	3-16 7	13-64	7-32 5	1-4	5-16 1	3-8 11-32	7-16 13-32	1-2 15-32	5-8 19-32	3-4 23-32
Length: %-inch or												***						
shorter\$3.50		3.85				7.00	\$ 7.00			\$12.00	\$18.00	20.00						
%-inch 3.85 %-inch 4.15	4.15	4.15	3.85	4.40	5.45	7.00	8.15	9.30	11.10		18.00		\$32.50	\$72.00	\$108.00			
%-inch 4.55	4.55	4.55	4.55	5.15	6.35	8.00	8.75	10.60	11.95	14.00	18.00	20.00	32.50	72.00				
1 -inch 4.80	4.80	4.80	4.80	5.50	6.70	8.00	9.30	10.60	12.80	14.00	18.00	20.00	32.50			\$148.50		
1%-inch					7.20	9.00	10.45	11.90	14.50	16.00	20.80	21.75						
1%-inch	5.45	5.45	5.45	6.25	7.55	9.00	10.45	11.90	14.50	16.00	20.80	23.50	37.50	72.00	108.00		344.00	
1½-inch 1½-inch	6.10		6.10	7.00	8.40 9.25	10.00	11.60	13.20 14.50	16,20 17,90	18.00	23.60	27.00	42.50	72.00	108.00	148.50 148.50	344.00 344.00	
2 -inch	6.75		7.40	8.50	10.10	12.00	13.90	15.80	19.60	22.00	29.70	34.00	52.50	86.40	119.50	148.50	344.00	
214-inch					10.95	12.00	10.50	10.00	21.30	24.00	32.00	37.50	57.50	93.60	131.00	163.50	344.00	
2½-inch	7.40		8.70		11.80		16.20		23.00	26.00	34.00	41.00	62.50	100.80	142.50	178.50	344.00	
2%-inch				21					24.70	28.00	37.60	44.50			154.00			
3 -inch					13.50		18.50	21.00		30.00	40.40	48.00		115.20		208.50	384.00	\$900.00
3¼-inch					14.80				28.10	32.00	43.20	51.50 55.00		122.40		238.50	424.00	*****
23/ Inch					16.05				31.50	36.00	48.80	58.50	02.50	136.80	100.50	253.50		
4 -inch					16.90				33.20		51.60	62.00	92.50	144.00		268.50	464.00	1068.00
4½-inch									36.60			69.00		158.40		298.50	504.00	
5 -inch							16.012		40.00			76.00	112.50	172.80		328.50	544.00	1236.00
5½-inch														187.20		458.50	594.00	4404.00
6 -inch														201.60		388.50	644.00	1404.00

In Broken Boxes, 853 P. C.

Full Boxes, 904 and 107 P. C.

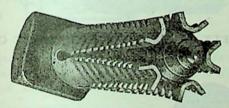
3-16 to 7-32 inch Diameter:
11/2 inches and Shorter, 500 in a Box.
13/4 inches and Longer, 250 in a Box.

5-16 inch Diameter: 2 inches and Shorter, 250 in a Box. 2¼ inches and Longer, 125 in a Box.

#### CAMPBELL HAMMER-LOCK COTTER PINS.

#### PATD. MARCH 1912 Diameter, inch...... 76" Wire gauge ..... 16 Length: 1/2 inch \$3 50 .... . . . . 3/4-inch ..... 4 15 \$6.70 \$9.30 -inch ..... \$4.80 4.80 .... 5.45 \$6.25 1¼-inch ..... 5.45 7.55 10.45 1½-inen ..... 8.40 806 P. C.

#### SAVAGE EXPANSION BOLT SHIELDS.



List Prices for Shields Only.

	Length of Shield,	Size	List Price
	Regular.	of Drill.	Per 100
Diameter of Bolt:	BEG TO S		
No. 8 and 10 Short	7/s-in.	32-in.	\$ 7.25
No. 10 Screw	11/4-in.	ra-in.	8.40
No. 12 Screw		re-in.	8.90
¼-inch :	.01 .	3/s-in.	9.40
ra-inch	. 2 -in.	7g-in	10.50
%-inch		1/2-in.	13.35
76-inch	21/ 1	ne-in.	17.75
½-inch	224 1	5/s-in.	22.00
%-inch	01/ .	7/s-in.	27.80
¾-inch	01/ 1	1 -in.	39.95
%-inch		11/s-in.	53.30
1 -inch		11/4-in.	66.60
501	P. C.		

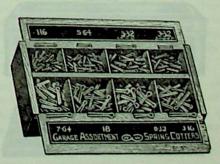
#### SPRING COTTER ASSORTMENT.



No. 18.

Sizes suitable for Agricultural Implements. 

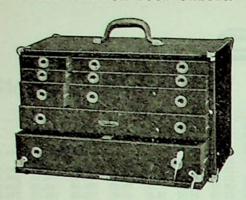
#### W. W. GARAGE SPRING COTTER ASSORTMENT.



Contains between 1500 to 1600 Keys, Te-inch to re-inch in diameter, various lengths. Durable case.

Price, each ......2006 \$2.25

UNION GARAGE TOOL CHESTS.



In addition to its capacity, it is conveniently arranged, as the two small top drawers are fitted with movable partitions for small parts and for delicate instruments, such as battery gauges, etc.

Below is shown the third long drawer from the top, which is designed to hold a complete set of socket wrenches of any make, while the last drawer becomes a till when removed from its place in the chest and which may be carried about the garage by means of a telescoping handle.

Frame—Thoroughly seasoned, properly kiln-dried oak. Frames are lock cornered and glued, making the strongest possible corner joints. Backs of chests are rabbeted or shouldered to frame as well as glued and nailed. The frame will not weaken or come apart.

Tray—The bottom compartment is a tray made of solid oak throughout, fitted with a handle which drops down into the drawer when not in use. Tray corners are lock-cornered, and bottom is protected by metal corners as shown.

Drawers—Sides of hardwood. Front of selected oak. Bottoms thick 3-ply veneer. Two small drawers fitted with movable partitions. One long drawer partitioned to hold socket wrench set. Drawers are extra strong, but light. Fronts are locked to sides with double lock joints. Three-ply veneer bottom is tongued to sides and fronts, making it much stronger and better than a thin, solid bottom.

#### Inside Dimensions (Inches).

	Long	Wide	Deep
2 Drawers	. 4	73/8	7/8
1 Drawer	. 4	73/8	21/8
2 Drawers	. 127/8	73/8	7/8
1 Drawer	. 127/8	73/8	21/8
1 Drawer	. 181/4	73/4	21/6
Tray		73/8	31/8

#### Outside Dimensions.

Long.	Wide.	High.	Approximate Weight.
201/4	91/4	131/4	23 pounds.
Model K.	Price each.		\$16.50

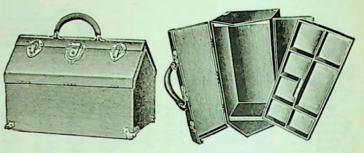
254 P. C.

#### PEERLESS TOOL KITS.





ALL-STEEL TOOL KITS.



Closed.

With Tray.

Made of prepared steel, but are no heavier than leather grips; weight, 8 pounds. Tray very handy for drills, bits, small parts, etc. Fitted with brass side catches, corner irons, strong two-tumbler Yale lock, steel leather-covered handles, riveted, they cannot pull out; electric welded. Brown baked enamel.

Style 118.	Size, 18x10x13	inches. Price,	each\$5.75
Style 122.	Size 22x11x13	inches. Price	, each 6.25
		258 P C	

#### HANDI-PANS.



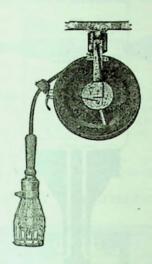
#### SAFETY GALVANIZED OILY WASTE CANS.



The only safe receptacle for oily waste, and a positive safeguard against spontaneous combustion. Self-closing spring cover, which always keeps cover closed, and never wears out. No rivets or solder to break off and become loose.

No. 3.	Diameter	141/2	inches.	Height Height	241/2	inches\$5.00 inches 6.20 inches 7.30
			254 P.	C.		

## AUTOMATIC EXTENSION REELS FOR ELECTRIC LAMPS.



Advantages—Convenience—takes the light exactly where wanted; eliminates the necessity of dragging extension cord over the floors, where the insulation is soon worn off and fire risks increased through short circuiting, and saves Cord, Lamps, Fuses and Guards. This saving actually amounts to the cost of the Reel in a very short time.

Size of Reel, 9 inches in diameter by 2 inches in width.

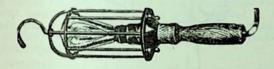
Each Reel is equipped with twenty-five feet of reinforced packing-house cord, socket-handle and lamp guard (less globe), all complete for installation.

The Reel has been examined, tested and listed as Standard by the Underwriters Laboratories. Local fire-preventive bureaus indorse it.

Price, each ......\$16.00

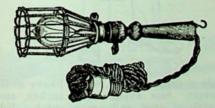
201 P. C. In 1/2 doz. lots, 254 P. C.

#### TROUBLE LAMPS.



Reinforced Portable Lamp, made of extra heavy material, wired complete, with 15 feet reinforced cord, plug socket, and 16 C. P. Lamp.

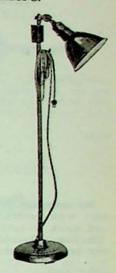
#### TROUBLE LAMPS.



#### UNIVERSAL PORTABLE LAMPS.

Equipped with 200-watt steel enameled shade, a 15-foot rubber super cord, a flush switch and plug for extension in the stand, a 35-lb. iron base. There are no wires in the joints to break; has patented wireless joint. Height, 5 feet from floor to top of joint.

Price, each ......\$25.00



#### AMERICAN TIME SWITCHES.



A mechanical agency used to switch on or off electric current at the desired time of day or night, requiring only on part of user a winding once every eight days. It consists of a high quality timing movement, jewelled in sapphires, with a Graham escapement.

Independent of this timing movement the "American" utilizes a specially patented motor which turns an approved rotary switch without forewarning, instantaneously, dependably and accurately.

Special features of an ingenious brake and lock are parts of this motor which facilitate exact mechanical functioning and make for durability of parts. In the "American" the movement does the timing only and the motor actuates the switch.

The entire mechanism is contained in a grey cast iron case, one-eighth inch thick. The outside dimensions are 10 inches high, 6 inches wide and 4 inches deep, with an approximate weight of 10 pounds and shipped in a wooden case. When closed it is air and water tight.

The "American" is a 20, 30 and 50 ampere time switch and can be used in connection with all types of approved rotary switches. The method of operation is simple and disclosed on an engraved plate contained on the inside of the switch.

20 or 30 Amperes.		Price,	each						 \$30.00	
50 Amperes.	Price,		p	-					 36.75	

#### RELIABLE BATTERY FILLERS.



No dust or dirt, clean, safe, sure. No metal in contact with contents. Keeps distilled water clean. Easy and quick to refill. Strong, substantial and of heavy construction. Packed 1 in carton. Capacity, 1 gallon—use any one-gallon bottle. Complete, minus hydrometer.

### WORKRITE HYDROMETER OUTFITS.



For fast and accurate work in garages and battery stations. Grab it out and drop it in—will not break. Mouth of gallon jar is lined with soft rubber, making it possible to grab out and drop in the hydrometer without danger of breaking. Plenty of clean water carried to car. Large pearl-shaped bulb will stand wear. Packed in corrugated boxes. Shipping weight, 5 pounds.

# For Use With House Lighting Plants.

A standard Workrite Hydrometer is tightly fitted in the cap of a gallon jar. Can be taken to town for supply of distilled water. Hydrometer and water are always safe and clean and ready for use. A special float for testing lighting tlant batteries is furnished also full instructions, Packed in corrugated paper boxes. Shipping weight, 5 pounds.

# WORKRITE HYDROMETER OUTFIT No. 1.

Consists of the standard Workrite Hydrometer and fitted in a glass jar of one quart capacity, for keeping distilled or pure rain water. Thus the hydrometer and water are always clean and ready for instant use. The large collar on hydrometer makes the jar dust and evaporation proof. Shipping weight, 2 pounds.

# RITE-LEVEL BATTERY FILLERS.



#### DOUBLE COATED BATTERY APRONS.



Apron made of double-coated, black, heavy drill with grommets in corners. Size about 34x47 inches, and carries a 9x16-inch patch of grey and apron stock. Edges turned and cemented.

Rubber Acid-Proof Aprons, 40-in. Price, each .. 2507 \$3.50

# BREAK-NOT BATTERY SYRINGE HYDROMETERS.



No. 1.

Used for testing acids in storage batteries. Accurate, carefully packed, large capacity. Full instructions for using with each outfit. Users of storage batteries will find this Hydrometer of great assistance in keeping batteries in good condition.

No. 1. Complete Outfit. Price, each, in doz. lots.654 1.00

#### BATTERY TEST-O-METERS.



No. 2.

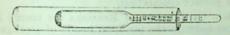
This is the highest class outfit made for testing storage batteries. Furnished with extra large high-grade red rubber bulb. The glass tube is so designed, that the Hydrometer may be taken out to prevent breaking. Each instrument packed in nicely finished wooden box, with full instructions for using.

#### HYDRO BATTERY FILLERS.



Very handy for filling distilled water into storage batteries. Overall length is 11 inches; net weight about ½ pound; the bulb has a capacity of 8 ounces, made of good grade black rubber; the stem is made of hard rubber; packed one in an individual box.

# FREEZE METERS.



For determining quantity of alcohol necessary to put in radiator or engine to keep mixture from freezing. Furnished with glass tube. Length over all, 11 inches. Weight 3 oz. In wooden box.

Price, each ......354 \$0.75



For determining quantity of alcohol necessary to put in radiator or engine to keep mixture from freezing Consists of glass tube, graduated 30 above to 50 below; hard rubber nozzle with rubber bulb. Complete, with instructions. Length over all, 12 inches. Weight, 4 oz.

#### ACCUROMETER HYDROMETERS.



Heavy, one-piece hydrometer barrel, same diameter throughout. Barrel is easily cleaned. Glass tips on the float enable it to float freely, and insuring an instant and accurate reading. Rubber connections designed of soft acid proof stock of best quality.

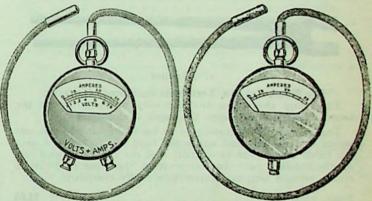
336 P. C. Dozen lots, 409 P. C. \$1.25 Price, each ...

#### SERVICE STATION HYDROMETERS.



Construction is similar to that of the Accurometer. quires a much less quantity of electrolyte in order to obtain a reading. Hydrometer float is supplied with glass tips and is fitted with a large Beaume and Specific Gravity Scale, ranging from 1100 to 1350. Float absolutely accurate. Length, 161/2 inches. 502 P. C. \$4.00 Price, each .....

READRITE POCKET METERS.



Pocket Style, 2-inch Diameter.

Dependable and accurate. The pointer stops almost instantly at the correct amperage or voltage. Strictly highgrade magnet of tungsten steel, doing away with all springs. No. 1. Ammeter, for testing Dry Cells, 0-30 Amps.

Price, each ..... No. 2. Voltmeter, for testing Storage Batteries, 0-8 Volts. ....856 \$1.25

#### AUTOMOBILE STORAGE BATTERY BOOKS.



A book devoted entirely to starting and lighting batteries. Gives theory, manufacture and maintenance. Complete instruction on running a battery shop, tools needed, shop equipment, charging methods, opening batteries, work on plates, jars, case. Profusely illustrated with especially made etchings and halftones.

Price ......5001 \$5.00

#### C-O BATTERY VISES.



Positively does away with the necessity of standing on top of battery box or clamping with the feet. Eliminates all danger of acid striking shoes or clothes or body of operator.

Vise is bolted to the floor with two lag screws. The mechanical construction consists of a sliding jaw carrying two pawls which engage ratchet teeth on the base. Another jaw is given great clamping power, being connected by a toggle link to the pedal and holds tight under low pressure. No possibility of injury to the battery. This mechanical feature absorbs the shock. This vise will accommodate any make and any size of battery now in general use. Parts interchangeable and easily renewed.

Net weight, 27 pounds; crated weight, 40 pounds.

Price, each .....\$6.85

List Net.

#### PRESS-SURE TERMINAL TONGS.



171/2 Inches.

For Removing the Terminals on Storage Batteries.

This tong eliminates the necessity of pounding on the terminal heads to remove the taper connections.

The method of operating is to back the binding nut out about two threads and apply the tong, the forked jaw over the cable end of the taper plug and the flat or cupped jaw on the binding nut. In this position, the taper plug can be easily pressed out, no matter how badly corroded.

# PELICAN PLIERS.



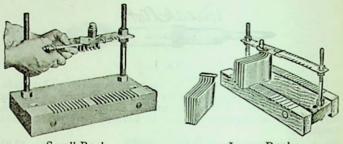
Tool for removing corroded vertical, taper and straight post terminal clamps. The wrench on end of handle will loosen the clamping nut. Screwdriver on other handle will spread the terminal clamp.

# UTILITY CLIPPERS.



Designed to cut battery terminal posts, leaving top of post flat. The angle of the jaws throws handles above a level plane so that any position of work is accessible. Tool can be used on copper cable; has capacity for cutting ¼-inch bolts in the thread and small rivets. Length 15¾ inch. Drop forged. Weights 2¼ lbs.

#### AMBU PLATE BURNING RACKS.



Small Rack.

Large Rack.

The Ambu Plate Burning Racks have guiding slots cut in the base as well as in the iron bar, or "comb." In this way the plates are held at exactly the right distance apart both at the top and bottom. Bases are made of hardwood. The small rack will take care of practically all ½-inch plates made by Willard, Gould, Philadelphia, and U. S. L. It will also accommodate all thin plates such as the Exide 3XC, Willard, and Gould. The large rack will take care of many other types, being designed to accommodate fully 95 per cent of all the types of plates which are made at present.

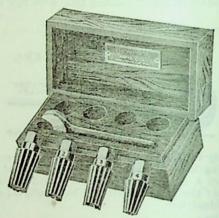
Special iron fittings are furnished which are placed around the plate lugs on the comb, so as to hold the plates firmly in position, and to prevent the hot lead from running off.

Shipping weight of small rack, 10 pounds; shipping weight of large rack, 15 pounds.

O	9 c	n, to pounds.
Price	small	rack\$ 8.00
Price	large	rack

List Net.

#### TAPER TERMINAL REAMER SETS.



A true mechanical way of keeping the taper terminals clean and gas tight. Each Reamer is hardened and ground and will not remove any more of the metal than is necessary to insure a perfect connection.

A complete combination of Reamers for truing and cleaning the taper holes in the terminal heads of storage batteries.

The four Reamers shown will fit practically every taper connection used on automobiles. Nos. 2 and 3 are made end cutting, which enables them to cut ahead of themselves where the taper hole is recessed, which is the case on several makes of batteries.

No. 4 Reamer is special for the positive and negative connections as used on the Dodge car.

These tools are designed so they can be used with the battery remaining in its place on the car.

The set consists of four Reamers, with wrench for operating, in case.

		Ex	tra	R	ea	m	er	S	F	u	rı	nis	sh	e	1.						
No. 1.	Price,																				.\$1.1
No. 2.	Price,	each.																			. 1.3
No. 3.	Price,	each.											•		•	•					. 1.3
No. 4.	Price,	each.										•	•	•	•		•				1.1

#### AMBU BURNING LEAD MOLDS.



In every shop there is an accumulation of scrap lead from old plates, post drillings, and so on. Save this scrap and use it in lead burning.

What It Is—A heavy sheet-iron die—stamped into slots. The iron is mounted on a wooden base, which is formed into a strong handle at one end. A pad of asbestos protects the wood from the hot lead. They are used in pairs, so that while one cools the other may be filled.

What It Does-Gives very handy sized burning lead, absorber from air holes

httely free from air holes.

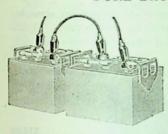
Shipping weight, 1¼ pounds each, or 2½ pounds per pair.

Price, each \$1.50

Price, per pair. 2.75

List Net.

#### FORE BATTERY LEADS.



Use these Battery Leads for making connections. They will pay for themselves over and over in the time saved alone. The Long leads come in sets of two, consisting of 3½ feet of rubber covered flexible wire with clips on one end and copper terminals on the other, for connection

between rectifier and battery.

The Jumper Lead consists of two battery clips with about one foot of rubber covered flexible wire, for series connection from one battery to the other.

The opening between the jaws of these clips is 11/2 inches, and snaps right on over terminal of battery.

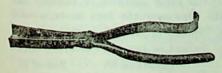
# FLOAT CUT BATTERY FILES.



# HELLER TERMINAL TONGS.

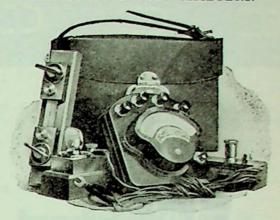


# HELLER JAR PLIERS.



Designed for the removal of jars from storage batteries. Jaws are proportioned to permit their insertion between

#### GARAGE TYPE VOLTAMMETERS.



Model 280.

This is a shielded portable instrument of pocket size, having three self-contained voltage ranges, one of which is of such a value as to be used with external shunts when current measurements are to be made. The ranges are 30, 3 and -0.1 volts, 300, 30 and 3 amperes. The shunts are used in connection with the 0.1 volt range. By means of an external resister used in connection with the 30-volt range, the range of the voltmeter can be extended to 150 volts.

The scale is uniform throughout its length.

The pointer has a knife-edge tip.

A zero-correcting device is also provided.

The scale is arranged to permit using the instrument for making cadmium tests.

A leather case can be provided which will contain the complete outfit.

Each instrument is accompanied by a very complete instruction book.

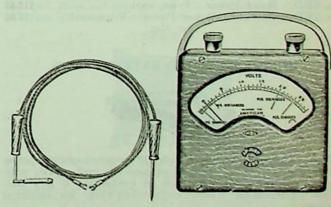
 Model 280 Garage Type Voltammeter
 \$41.25

 Leather Carrying Case
 5.50

 External Resister for 150 volts
 3.75

 List Net.

#### AMBU CADMIUM LEADS AND VOLTMETERS.



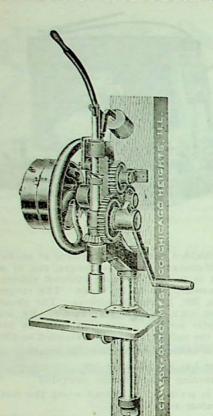
The Ambu Cadmium Leads are two flexible conductors fastened to brass prods with handles. One prod has a rod of chemically pure cadmium attached to it. Full instructions go with each set of leads. Shipping weight, 1½ pounds.

The Ambu Cadmium Voltmeter is made especially for cadmium tests. Scale reads — 0.2 to + 2.8. The readings which should be obtained are marked with red lines. Shipping weight, 4 pounds.

Model 280 Garage Type	Voltammeter\$41.25
Leather Carrying Case	5.50
External Resister for 150	volts

List Net.

C.O SPECIAL BATTERY DRILLS.



Table, 18 inches long, will accommodate any battery without its tipping.

The hand lever feed makes it invaluable for quick operation and return of spindle. Bores 0 to 1¼ inches. Drills to center of 14¾-inch circle. Up and down run of spindle, 4 inches. Up and down run of table, 16 inches. Size of table, 18x8 inches; greatest distance from spindle to table, 17 inches. Takes bits with ½-inch shank. Crated weight, 128 lbs. Net weight, 115 lbs.

# UNIVERSAL RADIO BATTERY CLIPS.



Made of copper, natural finish; 10 ampere capacity; screw connection for cord. Spread of jaws 16 inch. Jaws with teeth on three sides. For use of connecting B Dry Batteries. Oscillation transformers. Anywhere for electrical contact.

Less than Box of 10

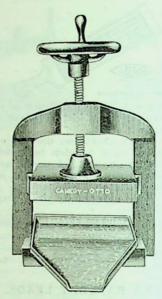
No. 27. 10 amp. capacity. Each, 171..... Each, 146 \$0.25

Universal Battery Clip No. 24-A made of steel, lead coated to resist acid fumes; screw connection for cord. One jaw with teeth, for use in making a secure connection to A and B storage batteries; also convenient for tapping off various voltages from B batteries.

Less than Box of 10

No. 24A. 15 amp. capacity. Each, 153. Each, 121/26 \$0.25

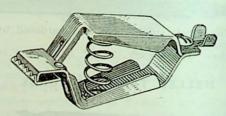
C-O BATTERY PLATE PRESSES.



No. I will accommodate only one plate. Used for straightening and forcing of active materials back into grids. Transite boards furnished, to be placed between plates and outside of end plates for pressure. No iron parts come in contact with the plates. Trough carries acid from press. Complete, with 11 transite boards, ¼ and ¼ inch thick. Height, 16 inches. Width, 11 inches. Hand wheel, 7½ inches. Net weight, 32 lbs.; crated, 36 lbs.

List Net.

# UNIVERSAL BATTERY CLIPS.

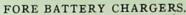


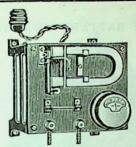
(Lead Plated).

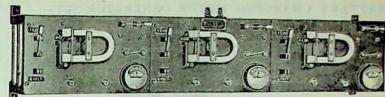
Enable one to charge lighting and starter batteries without removing them from the car. Simply fit the connecting cords with these clips and snap them over the battery terminals. Don't stop to clean dirty terminals.—the teeth bite through and make a good contact.

To charge batteries in series, provide a number of pieces of flexible wire or cord, 15 to 20 inches long and equipment with clips on each end. Use these jumpers to connect the batteries by snapping the clips over the lugs or terminals.

No. 24-A. 15 Ampere. Spread of jaws, 34-inch. No. 21-A. 35 Ampere. Spread of jaws, 1½-inch.







TYPE 5-D. Capacity 36 Volts.

Every one who has a radio set or automobile should not be without one of these chargers, as it will keep your batteries 100 per cent efficient at all times.

The simplest and most practical for charging batteries which operate from Alternating Current. They are automatic, easy to operate and are time and money savers; do not injure batteries and operate by attaching plug to lamp socket.

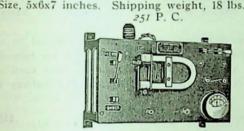
AUTOMATIC OPERATION.

The rectifier is self-starting and upon resumption of the line current the charging is continued. It is entirely safe to put a battery on charge during the night. The ampere charging rate also reduces as the voltage of the battery rises and the charge nears completion so that the battery will not be harmed by leaving it on over charge.

TYPE 1-A.

Capacity 6 Volts, 6 Ampere.

W	ill c	harge	any 6	-v	o	lt	1	oa	ıt	te	r	ie	s													-	
110	Volt	ts, 60	Cycle																			 		.\$	17.	50	)
220	"	60	"																						19	25	í
110	**	25																							22.		
220	**	25	"																					S	24.	20	)
C:		E G 7	in the		-	31			_			٠.		- :	1.	٠,	0	,	11.								



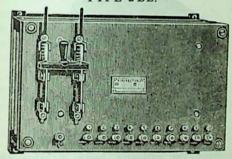
TYPE 2-B. Capacity 12 Volts, 6 Ampere.

1	Will ch	arge	both	6	a	n	d	1	2	-v	0	lt	ba	at	t	er	ie	S								
110	Volts	60	Cycle																					 . \$	25.	00
220	"	60	***		-																	 		 	27.	50
110	"	25	"																						31.	25
220	"	60	- 11				i							ì						i	ì		i		34.	40
C	line 7	7 10	incha																							

Size, 7x7x12 inches. Shipping weight, 27 lbs.

156 P. C.

TYPE 2-BL.



Direct Current Battery Charger.

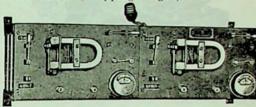
When Direct Current only is available, the Type 2-BL Battery Charger will recharge all types of starting, lighting and ignition storage batteries. Will charge anywhere from one to ten 6-volt batteries at a time, or five 12-volt batteries at a time, or any combination of batteries up to 60 volts.

Each one of the ten numbered terminals along bottom of base indicates one 6-volt battery. Connection of the D. C. Line is made just above switch. The base is mounted on cast iron supports for mounting to wall.

Will charge one to six 6-volt batteries at six ampere charging rate, or any combination of batteries up to 36 volts.

																				1	Pri	ic	es	5
110	Volts,	60	Cycle																		\$7	2.	00	0
220	"	60	"																		7	9.	20	0
110	46	25	"					 							 						9	0.	00	0
220	11	25	"																					

Size, 7x7x36 inches. Shipping weight, 80 lbs.



TYPE 3-C. Capacity 24 Volts.

Will charge one to four 6-volt batteries at six ampere charging rate, or any combination of batteries up to 24 volts.

1.10	Volts,	60	Cycle																							-	Prices \$50.00
220	"	60	"																								55.00
110	**	25	"																								62.50
220	"	25	"																								
Si	ize, 7x	7x24	inche	s.	S	h	i	D	pi	n	g	W	e	ig	h	t,	,	4	S	1	b	S					

153 P. C.

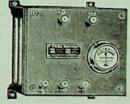
# SMALL EXPENSE TO OPERATE.

The cost of current to charge average radio battery would be less than five (5) cents. Automobile batteries five to ten (5 to 10) cents, depending on the ampere capacity of the battery. This rectifier is also very simple in its operation and is fool proof, anyone can operate it.

# SATISFACTION.

In short, the Fore Rectifier solves your battery problems. It is always ready at your convenience and can be readily carried and attached to the battery wherever it is located. The best, most economical and efficient method of charging all types of storage batteries from an Alternating Current

#### TYPE I. A. L.



# RECTIFIER FOR CHARGING BATTERIES FROM FARM LIGHTING PLANTS.

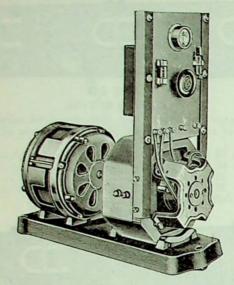
This type is constructed for the benefit of the garage man who has his own electric light plant installed, or is located in towns where there is no current available other than his farm lighting plant.

With this small equipment the garage man can take care of 95 per cent of the batteries used in automobiles today. It may be attached to the wall right beside his 30-40-volt plant and is always ready for his convenience. This rectifier will last indefinitely with not one cent of upkeep.

Shipping weight, 12 lbs.

Two 6-Volt or One 12-Volt Battery Three 6-Volt or One 12-Volt Battery	
153 P. C.	

#### BATTERY CHARGING MOTOR GENERATOR SETS.



Type 9-G.

#### All Ball Bearing.

#### 3-G. 300 Watts Capacity. 30 Volts, 10 Amp., 1800 R. P. M.

This outfit will charge six 6-volt batteries in two groups of three each at a 5 ampere rate or three batteries in series at a 10 ampere rate. The price includes one Auxiliary Rheostat.

### 9-G. 950 Watts Capacity. 38 Volts, 25 Amp., 1800 R. P. M.

This set will handle twenty 6-volt batteries charging four groups of five batteries in series at 6 ampere rate. The price includes three Auxiliary Rheostats and Automatic Cutout.

### 10-G. 980 Watts Capacity, 70 Volts, 14 Amp., 1800 R. P. M.

This outfit was developed to meet the call for a higher D. C. voltage than that provided by the 9-G set. With this outfit ten 6-volt batteries may be charged at a 14 ampere rate or twenty 6-volt batteries in two groups of ten batteries each at a rate of 7 amperes. The outfit is complete with automatic cutout, one Auxiliary Rheostat.

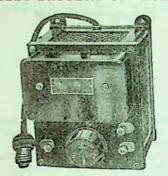
#### 30 G. 3000 Watts Capacity. 110 Volt, 28 Amp., 1800 R. P. M.

For service stations requiring large capacity. Fourteen 6-volt batteries may be charged at 28 ampere rate. Two groups of 14 batteries each (28 batteries) at 14 ampere rate. Three groups of 14 batteries each (42 batteries) at 9 ampere rate. Four groups of 14 batteries each (56 batteries) at 7 ampere rate can be handled with this outfit. It is complete with Control Panel and three Auxiliary Rheostats.

For Single Phase (60 Cycles)\$385	CO.
For Two or Three Phase (60 Cycles) 300	.00
Floor Space 42"x16". Shipping weight, 550 pounds.	

List Net.

#### VALLEY BATTERY CHARGERS.



Type MC.

An economical Battery Charger that will keep your battery fully charged.

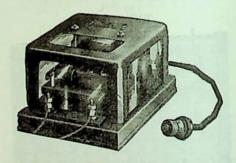
This handy charger is quite simple and easy to use. It plugs in on a house lighting system just like a lamp and its use does not require removing the battery from the car or even disconnecting the wires on the battery. Simply clamp the charger clips over the battery terminals and turn on the current. It will fully charge the battery over night and requires no watching when in use. Ordinarily eight or ten hours is sufficient to bring a weak battery up to a fully charged stage but if the charger is left on a longer time, it cannot overcharge the battery or harm it in any way.

This machine is trouble proof and economical to use. Will charge either 6 or 12-volt batteries, and are furnished equipped with an ammeter, 8 feet of extension cord and plug, and two 5-foot battery leads and strong battery terminal clamps.

Type MC. Price, each.....\$18.00

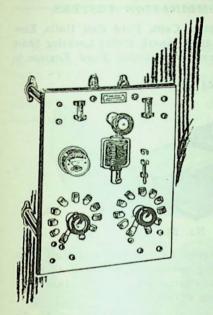
153 P. C.

# VALLEY RADIO BATTERY CHARGERS.



Operates from the ordinary house lighting circuit and will fully charge a battery at a cost of approximately 10 cents; cannot overcharge nor harm battery; requires no watching when in use.

The A. & B. type in one machine charges both 6-volt A and the 24-volt and higher voltage B batteries. Mounted in glass panel case. Furnished with an indicator, extension cord and plug, and battery leads with strong battery terminal clamps.



#### (F) MOHAWK RECTIFIERS.

In the design and construction of the Mohawk Rectifier we have had constantly before us the following requirements:

- To produce a rectifier allowing a charging rate as high as 10 amperes without injuring the bulb.
- (2) To actually prolong the life of the bulb.
- (3) To protect the bulb against any possibility of damage due to excessive overload.
- (4) To obtain a charging capacity of 15 3-cell batteries.
- (5) To have an efficient current control.
- (6) To possess special features, such as unusual accessibility, better charging regulation, more attractive appearance.

Mohawk Rectifier-Type R. B. S.-answers these requirements.

Mohawk Rectifier—Type R. B.—answers all, with the exception of the bulb protection which is accomplished, on Type R. B. S., by the use of a special triple pole circuit breaker, mounted on the panel.

A rectifying bulb of standard manufacture has been used.

- (1) A knife switch (placed on the board to the right of the ammeter) is inserted in such a way that after the rectifier has been started and flow of rectified current has begun, the switch may be reversed and the rectified current then passes down both filament supports (1 & 2) in parallel—one-half the total charging current along each support. Reversing the switch also cuts out a section of the transformer winding used to heat the filament, thereby reducing the heat in the bulb and allowing a much higher charging rate.
- (2) The action of the paralleling switch, causing current to flow along both supports equally, brings the arc from anode A to the centre of the filament (at F) reducing the tendency of this filament to sag. Sagging of the filament shortens the life of any bulb—if this tendency is eliminated the bulb naturally enjoys longer life.
- (3) The protection of the bulb (on type R. B. S.) is accomplished by the use of a specially designed triple pole overload circuit breaker, mounted in the center of the panel. The circuit breaker is set at the factory to operate at 12 amperes—if the charging rate should creep to this amount, or a short circuit occur in the battery line, the circuit breaker would open both A. C. and D. C. lines and operation of the rectifier could not be renewed until the cause of the trouble was removed. It is impossible for a sudden rush of current to flow through the bulb and weaken the filament.
- (4) A charging capacity of 15 3-cell batteries means that when batteries are fully charged, about 112.5 volts are

required. The construction of the transformer makes this possible.

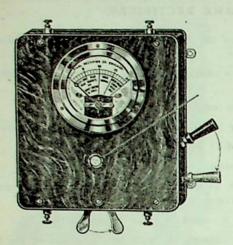
- (5) On type R. B. S., the specially designed Rotary switch, built with heavy blades capable of carrying a large overload and of breaking quickly to prevent arcing at the contacts, controls the flow of current from the A. C. lines and in the D. C. circuit. On type R. B., a triple pole snap switch is inserted in both A. C. and D. C. circuits to control the current flow.
- (6) Perfect regulation of the charging current is accomplished by two dial switches, having heavy double contact points, connected to taps from the transformer. The operation of the dial switches regulates the voltage by increasing or decreasing the number of turns used in the transformer—the right hand dial stepping up the voltage at approximately 10 volts per step, and the left hand dial at about 1-1 volt per step.
- (7) The design of the complete unit makes for ready accessibility to those parts which might need attention. A. C. fuses are on the front of the panel; the bulb socket is where it can be reached easily; wire connections are accessible but seldom need attention, as they are securely made and soldered at the factory; switch contacts can be cleaned easily if necessary.

The panel is of slate, 1" thick, 14"x20" outside dimensions. It is built to be fastened to a wall with 1" No. 10 Flat Head Iron Screws and stands out from the wall 10 inches. The transformer and rectifying bulb are mounted on the back, permitting the front to be built just as is any power switch-board.

SPECIFICAT	TIONS.		PR	ICES.
Capacity	Volts	Cycles	Type R. B.	Type R. B. S
to 15 3-cell Batteries	110-115 220-230	60 60	\$130.00 158.00	\$150.00 178.00
SPECIAL FREQUE	NCIES			
Capacity	Volts	Cycles	Type R. B.	Type R. B. S.
	110-115	25-30	\$158.00	\$178.00

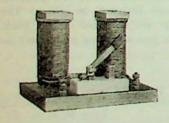
List Net.

STAHL MAG FIXERS.



Will locate and remove all shorts in Ford magnetos due to pieces of wire, cotter pins, etc. It will recharge any discharged or weak magnets in the magneto. It will show the condition of the magneto instantly by simply connecting the instrument to the engine frame and the magneto post and pressing the meter button C. Shorts are removed in less than five minutes by manipulating lever B. Magnets can be recharged by moving lever A back and forth several times. Excessive end play in the crankshaft is instantly detected. Is used with two or three 6-volt storage batteries. It cannot be used on a power or lighting circuit or with dry cells. Shipped complete with a set of leads, with clips for connecting up the instrument, a high-grade compass and instruction book, packed in fibre carton, 14x13x6 inches. Shipping weight, 12 lbs.

#### ST. LOUIS MAGNETIZERS.





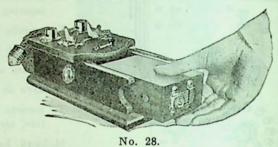
A simple, inexpensive device for remagnetizing the socalled permanent magnets used on all magnetos. Operated from a 6-volt or 12-volt storage battery or from dry cel's. Size, 7x4½x5¼ inches. Weight, 8 pounds.

Magnetizer	with	Ford	Attachment.	Each\$9.50
Magnetizer,	Star	ndard.	Each	8.50
			List Net.	

#### JEFFERSON COMBINATION TESTERS.

For Testing Battery Ignition Coils, Ford Coil Units, Electric Horns, Automobile Lamps, Spark Coils; Locating Short Circuits, Grounds, etc., and for Starting Ford Engines in

Cold Weather.

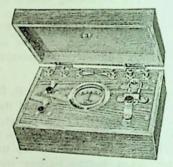


Although primarily designed for testing Ford Unit Coils, can also be used for testing automobile lamps of all styles, and sizes, spark plugs, coils, electric horns; for locating shortalternating current lighting circuit.

No. 28 Ford Unit and Combination Tester for alternating current ......\$10.00

Standard stock windings No. 28 Testers will operate on 110 to 120 volts A. C., 50 to 133 cycles. For 110-volt, 25-cycle windings, add 25 per cent to net prices; 220-volt, 60-cycle windings, add 15 per cent to net prices; 220-volt, 25 cycle windings, add 25 per cent and 15 per cent to net prices.

#### Jefferson Automobile Coil Testers.



No. 25.

This instrument is for testing non-vibrating Automobile Ignition Coils, and will instantly detect any trouble in the coil windings or condenser. The test is quick and positive, showing at once whether the trouble is in the coil or elsewhere on the ignition circuit.

Furnished with six flexible cables equipped with snap terminals, together with complete instructions for making proper connections. Designed for connection to 6 or 12-volt battery current. A valuable addition to any service station, garage or repair shop.

No. 25 Battery Coil Tester, assembled in highly polished case 3½x6x8¾. The equipment consists of an ammeter, vibrator, test condenser, adjustable spark gap, two switches and a contact button for slow-speed testing. Metal parts are heavily nickeled.

203 P. C.

#### (F) ELECTRIC TEST UNITS.

Models TF-1 and TF-22 are motor driven, friction drive units for quickly making tests on all types of starting, lighting and ignition as furnished to the automotive trade. Both units are similar in design and construction, as illustrated in Fig. 1. TF-1, however, is equipped with a 1/2 H. P. motor, and TF-22 with a 3/4 H. P. Repulsion-Induction motor.

Defective motors or generators, after being removed from the automobile, may be tested in these machines before the work of repairing begins. After the repair work is completed, the units can be scientifically checked with their original characteristics by testing on TF-1 or TF-22 Electric Test Units.

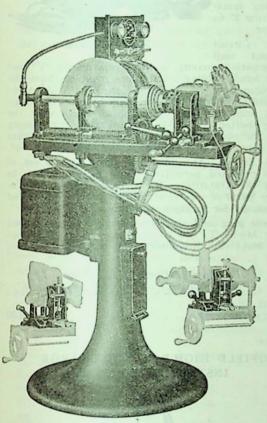


Fig. 1.

We recommend to all service stations a Service Manual which contains wiring diagrams and manufacturers' characteristics on all motors and generators in general use. We have these manuals for sale.

Ordinary troubles such as loose connections and grounds can be detected probably without the use of a test stand, but for the locating of more serious trouble this equipment is indispensable. It eliminates guesswork and gives the repairman confidence in the work he turns out.

#### EQUIPMENT FOR MODELS TF-1 AND TF-22 UNITS:

UNIVERSAL FOR TESTING ALL TYPES OF STARTING, LIGHTING AND IGNITION.

1/2 H. P. MOTOR-For TF-1 only.

34 H. P. MOTOR-For TF-22 only.

WESTON AMMETER-Double Range, center reading-30-0-30 and 600-0-600.

WESTON VOLTMETER-Range, 0 to 15 volts.

HIGH AMPERAGE SWITCH.

SPECIAL UNIVERSAL VISE-Designed to self-center all round type units from 31/2" to 8"; will also take rectangular and odd shaped units.)

SPECIAL BRACKET-(For Delco Buick Type Generator).

FRICTION DRIVE-Having Speed Range, 0 to 3060; Rotation, Clockwise-Counter-clockwise.

UNIVERSAL FLEXIBLE COUPLING.

UNIVERSAL CHUCK.

BRAKE PULLEY.

BRAKE ARM.

SCALE.

DISTRIBUTOR BASE.

COUPLINGS-(For Remy and Delco Generators).

ADAPTERS-Fitting various types of motor shafts.

EIGHT POINT SPARK GAP.

LATHE ATTACHMENT.

DOUBLE SIX-VOLT BATTERY-With double pole, high amperage switch and battery box.

All the above equipment (with the exception of battery and battery box) is assembled on a base, which is mounted on a metal pedestal.

The double six-volt battery and battery box are mounted upon the pedestal under the base.

# ELECTRIC MOTOR SPECIFICATIONS: (Optional).

1/2 H. P. Motors can be supplied in any desired voltage in all cycles and phases.

34 H. P. Repulsion-Induction 110-220 volt, 60 cycle Single Phase A. C. Motor.

When ordering either TF-1 or TF-22, always state motor specifications required. Height of TF-1 or TF-22. 

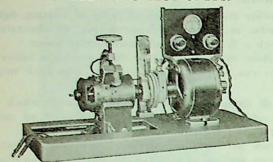


Fig. 2. Lathe Attachment

Battery, 12 Volt..... \$20.00 United Motors Service Parts, including-TF-227 Delco-Buick Bracket.... TF-228 Distributor-Coil Base.
N-94 Spark Gap 8 point.
TF-229 to 235 Couplings, Delco-Remy. 10.00 8.00 Lathe Attachment 30.00 Extra for 3/4 H. P. Repulsion-Induction 110-220 Volt Motor.

Model TF-22 Electric Test Unit, universal, designed and equipped as Model TF-1 but with 34 H. P. Repulsion-Induction 110-220 Volt Motor, 12 Volt Battery, all United Service Couplings and adapters and lathe attachment, but without List Net.

# (F) ELECTRIC TEST UNITS.



Model TF-7 Motor-driven Unit will test the complete Ford F-A Starting and Lighting Units and their component parts.

#### Equipment.

One-third H. P. Constant Speed, Standard Type A. C. or D. C. Motor, Range—1750 R. P. M. Ammeter, Range—30-0-30. Flexible Coupling—Brake Arm, Brake Pulley, Scale—For

Starting Motor Test.

Armature Test-Test Lamp-Test Points.

This unit is furnished without pedestal. If preferred, pedestal can be supplied at an additional cost. The base of Model TF-7 is of all metal construction, and measures 14"x28". Base is provided with slide rails, upon which is mounted a V block or clamp for holding generators and starting motors.

Model TF-7 is equipped with scale for starting motor tests. Both scale and brake used for torque tests are intended to remain in place while testing generators. Unit is also equipped with Armature Test or "Growler." For testing opens and grounds, a test lamp, wire leads and

test points are furnished.

The flexible coupling on Model TF-7 will take both generator and starting motor shafts-small discs are furnished for motor shafts and for generator shafts without gears.

Snap switch on right-hand side of panel-board controls operation of motor; switch on left-hand side controls growler or armature test.

When driving a Ford F-A generator, Model TF-7 can be used as a "Charging Outfit" for charging batteries. It has

sufficient capacity for charging two batteries at one time.

A battery must be supplied for testing both generators and starting motors. The unit is a grounded system and therefore is single wired instead of double wired.

When ordering, always state voltage, cycle and phase of electric current where the 1/3 H. P. motor furnished with unit is to be used.

#### Specifications.

Dimensions (crated), 32"x16"x201/2"; net weight, 100 lbs.; shipping weight, 145 lbs. Model TF-7. Price, each ......\$110.00

# (F) MAGNETO-COIL TEST UNITS.

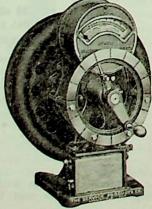
Standard for testing and adjusting Ford coils and magnetos, also spark plugs, horns and lights.

Model TF-200 is furnished complete with Ford fly wheelmagnet assembly and also magnet coil assembly. Unit is highly finished in nickel and enamel, all insulated parts being made of bakelite dilecto.

Model TF-200.

Price, each.....\$65.00

List Net.

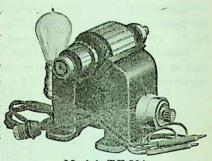


Model TF-200.

#### (F) ARMATURE TEST UNITS.

Model TF-504 Armature test unit, is a tool designed for the purpose of testing short or open circuits, and also grounds in any type of motor or generator armature used on starting and lighting systems. This unit is practically universal, testing armatures ranging from 2" to 41/4" in diameter.

For Short Circuit Testing-Connect unit



Model TF-504.

to 110-volt alternating current, mount armature in "V" and slowly turn by hand, holding a flat piece of steel above the armature approximately ½" away. If there is a short circuit in the winding or commutator, this blade will be attracted to the armature with a humming noise over the slot containing shorted coil. By marking slot and tracing connection to the commutator end, the test will indicate whether it is short in the commutator or within the coil.

For Ground Testing-An indicating lamp and a set of test points are provided permitting grounds and opens to be located on the armature. Field coils, frames, assemblies and other parts of electrical units can also be tested in the same manner for location of grounds.

An attachment plug and six feet of cable are furnished for connecting Model TF-504 to lighting circuit. A snap switch on the front end disconnects the current from unit coil.

#### Specifications.

Dimensions (crated), 131/2"x7"x7"; net weight, 25 lbs.; shipping weight, 30 lbs. Model TF-504. Price, each ......\$24.00

# SPRINGFIELD HIGH-RATE DISCHARGE INSTRUMENTS.



Purpose.

The Springfield High-Rate Discharge Instrument is a "Trouble Shooter" for use in battery service stations, designed for the purpose of detecting damaged cells in storage batteries.

#### Description.

Consists of-

Special high-grade Voltmeter with a center reading 2-0-2, graduated in tenths.

Voltmeter is mounted on two steel posts which terminate in a convenient handle.

Between these posts the current is short-circuited through a fixed resistance which determines the rate of discharge. The resistance has a current capacity of 80 amperes cold and 70 amperes when hot.

Model TF-501. Price, each.....\$13.50

List Net.

By special treatment, California Redwood, the best known resistant to acid, has been perfected, and is used as insulation in all types of "General" batteries.

"General" engineers developed a hand-pasted plate which combines high capacity and long wear, assuring good service under the roughest usage.



"General" batteries are backed by an iron-clad guarantee—not an adjustment guarantee. This is the first real battery guarantee, which means satisfaction without argument or extra cost to the customer.

The new Anchor Seal, the outstanding recent improvement in battery construction. It keeps the posts tight regardless of vibration, prevents corrosion and assures good connections.

#### AN UNUSUAL GUARANTEE.

All "General" batteries are backed by an unqualified guarantee. There are no conditions and no red tape attached to this guarantee.

Upon delivery to factory in St. Louis, within 12 months of date of purchase, we will repair or replace, without additional cost to the owner, any "General" battery that is defective or incapable of giving 80 per cent of its rated capacity for any other reason than lack of charge.

The "General" guarantee means that every "General" battery must give maximum service for at least 12 months without extra cost to you and that at the end of the year the battery must be working efficiently.

# IMPORTANT DIRECTIONS FOR ORDERING BATTERIES.

Order by catalog number. Unless otherwise specified, batteries will be shipped with bare posts suitable for cars with clamp-type terminals. If battery with cone-type terminals is desired, specify same, giving make of car, year and model.

We are not liable for goods damaged in transit. Our responsibility ceases when we deliver the material in good condition to the transportation company. Inspect all shipments on arrival and make prompt claim against the carrier for damage in transit. If you will notify us at once of any such claim against the carrier, we will give you all assistance in our power to aid you in collecting the amount of your loss.

# AUTOMOBILE STARTING AND LIGHTING BATTERIES.

			The state of	Amp.	Plates	Length,	Width,	Height,	Wgt. ea.,	Price,
Nos.	-Ty	pe-	Volts	Hours	per cell	in.	in.	in.	lbs.	each
Ford Special	SSL	670	6	70	11	93/8	7 %	81/8	42	\$22.50
103	SSL	680	6	90	13	1016	73/8	87/8	50	30.00
105	SEL	680	6	90	13	20 16	41/4	81/8	50	32.00
106	SSH	680	6	90	13	1014	518	10%	50	36.00
108	SSL	610	6	100	15	12	7%	8%	59	40.00
111	SEH	610	6	100	15	1514	414	103%	59	40.00
112	SSL	612	6	130	19	14%	7%	8%	69	46.00
114	SSH	612	6	130	19	145/s	5 18	10%	69	54.00
115.	SEH	612	6	130	19	1514	5 %	10%	69	52.00
116	SSA	611	6	81	11	93/8	7%	93/8	46	25.00
117	SEA	611	6	81	11	20 ra	313	93/8	46	32.00
119	SEA	613	6	99	13	20 via	41/4	9%	54	34.50
121	SXA	613	6	99	13	101/4	73/8	9%	- 54	30.00
122	SSA	615	6	115	15	12	73/s	93/8	62	38.00
123	SEA	615	6	115	15	20 is	414	93%	62	40.00
125	SGA	617	6	132	17	11 %	818	9%	69	50.00
126	SSP	611	6	100	11 -	93/8	7%	111/2	62	46.55
129		1235	12	35	7	123/4	7%	8%	58	35.00
130	SML		12	35	7	12 16	7	87/8	58	35.00
132	SSL		12	- 50	9	15	7%	8%	70	48.00
134	SSH		12	50	. 9	15	518	10 <sup>3</sup> /s	70	61.10
145	SSA		12	45	7	123/8	7%	9%	67	36.00
146		1209	12	63	9	15	7%	93/8	85	50.00
147	SEA		12	63	9	20 %	53/4	93/8	85	50.00
157	SEH		. 18	35	7	1511	63/4	103/8	85	71.70
169	I	2413	24	13	3	12%	83/4	95%	68	70.00
172	SA	607	6	50		63/4	73/8	93/8	46	15.00
173	SA	609	6	70		816	7%		54	18.00
175	SA	611	6	85		73%	73/8		54	22.50
176	SA	613	6	100	T. British	7%	7%		65	30.00

#### GENERAL REPLACEMENT BATTERIES FOR POPULAR CARS.

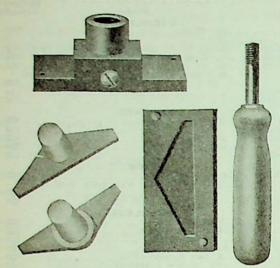
In ordering a battery to replace one in service, order by catalogue number, giving also the assembly number following the catalogue number, i. e., 1 No. 114-16Y, is one No. 114 battery, assembly 16Y; also give the name of car, year and model for which the battery is intended, in order that the factory may check the selection.

ALLEN.			DORRIS.	
	Battery No. & Assembly No.	Year	Model	Battery No. & Assembly No.
1913-1440	114—2	1913-14-15	.H. I	
1914	106—11.	1916-17-18-19	.IA6, IB6, IC6, 6-80	
1915. 36 1917-18-19. 37, 41.	108—1L	1915	.4. Roadster	129—588
1920	116	1916-17-18	.5, 5A, 6, 9, 11	116—18
1916-17A. B. C. 6-40	103—11.	1917	D, E, F.	107—35L
1919	116—1S	1918	.D. E, G-4 & 6	116—Р
APPERSON. 19134-45, 4-55		1916	ELGIN.	116—1S
19134-45, 4-55	126—2 108—11	1917	. Elgin 6. Series 17	
1914	58. 4-40,	1919	Elgin 6	
1917-18-19	116—P		EMPIRE.	
1918		1914	.31	108—1L 105—30L
1913-146-45, 34L, 4-41, 6-46	112—2	1915	.33 (31-40)	133—721.
1914	103—1L 112—1L	1917-18	.50, 70, 70-A, 71	116—1M
1915	103—17B	1917-18	.51	116—6S
1916-17-18	121—7L	1919-20-21	ESSEX.	
19186-39B, 6-39, Sport			FORD.	
1914-1514, 15BRISCOE.		1918-19-20-21		Ford Spl.
191515 Splitdorf		1913-14	Series 2, 3, 4, 5	157—97
1916		1914-15-16	Series 6, 7, 8 Series 9	137—65
1918-194-24	105—32M			
1920		1914-16	.21M. U. V	117—33S
BUICK. 1914-15. B24, B25, B36, B37, B54, B55, C2 1915. C36, C37, C54, C55, C4 Truck.	4, C25., 105—36B	1917	.K. G	116—15S 121—15L
1916 D54, D55, D4 Truck	121—13Y			
1916		1912-13	HAYNES. . 22. 23. 24, 25	143—75
1919-20-21	121	1913-14	. 26, 27, 28	13653
19121912 CADILLAC	169—112	1916-17-18	. 30, 33, 34, 35, 31, 32	0, 6 & 12
1913	128—48	1919-20	36, 37, 38, 39, 40, 41, 38-44, 39 cyl., 34 & 35	122—1L
1917-18All	115—P		HUDSON	
1919-20		1913	. 37, 54	169—112
1914 S-35 M-35 & O	110—2	1914-15	.6-54 .6-40	103—17B
1914 O-40, 13 & 14 1914-15 R25		1916-17	.6-40 .Super Six	121—P
1916. T 1917-18. T17. U	101—10L 103—3L	1918	Super Six	
1918-19U-18	121—15L	1313-20-21	HUPMOBILE.	121
1914-1524, 26, 26B, 29	160—99	1914	HA HUPMOBILE.	108—1L
1916	121—18L	1916-17	N NI. NO NR NII Sarios	NII 9
CHANDLER.		1918-19	3, 4. R, RR	121—IL
1913-14-15	106—2 103—31	1920		
1017 10 Series 18 1st 24000	116-P	1913-14	JACKSON.	151—89
1918-19. After 1st 24000.	121		. 43, 53, Sul. Mag	
CHEVROLET. 1913-14		1915	. 6-48	103—17B
1914-15	2 Royal	1916	. 34, 34-8, 350	
Mail		1917	.349 .Wolverine	116—12S
Amesbury, Royal Mail	10311.	1917-18	.350	121—2
1916-17-18		1913-14-15	JEFFREY. Rambler Cross Country, 6 (96	167—108
1918	123—P	1914-15-16	. Four (93)	138—59L
1919-20-21FB	121	1916-17	.4-62 Chesterfield 6	121—1S
19134-40, 4-50, 6-60	169-112	1917	All	103—1L
1914-15. 9-4 9-6 (Big 6). 1915. 10-4 Std. 4, 6-50 (Little Six).		1916-17-19	JORDAN. B Series 1, 1919	121—1L
401F 16 4-40 6-66 X-50 X-60	17 1 13 Y	1912	.A KING.	100-9
1917Ali	121—P	1914	В	106-2
1919-20	121	1915	.C. S-D.	103—11. 105—32M
1913-14COLUMBIA,	126—2	1916-17	D. E	116—1S
1913-19 1917-18 A 1918-19 C, D. CS	116—P		EE KISSEL KAR.	
1918-19	100	1913-14	6-48, 6-60	112-11
1916-17-18.	116—1S	1914	.30, 40, 50, 60	108-11
1915-16-17-18-19.All	145—51S	1915-18-19	. 15 (4-36) & (6-42), (18-19), (6-16-17 (4-32) & (6-42), 100	-42) 1211S
1919-20	145		Doub'e 6	116—1S
	to trans and model .			

# GENERAL REPLACEMENT BATTERIES FOR POPULAR CARS.

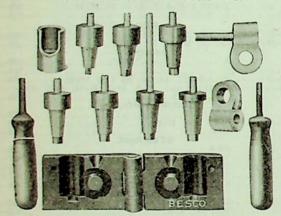
GENERAL REPLACEMENT BA	TTERIES FOR POPULAR CARS.	
Year Model Battery No. & Assembly No.	Year Model	Battery No. & Assembly No
1914	0VERLAND. 1913	167—108
1914	1914	88-6 105-32M
1916-17. 6N, 6P. 119-58S 1916-17. 6-O 116-16S	1916-17-1875, 75-B, 90 Club, 90-B, 90	116—1M
1918. O 116—IL 1918. 6R 116—P	1916-17-18. 75, 75-B, 90 Club, 90-B, 96 1916-17-18. 84, 87, 88-4, 88-8, 88-B 1918. 85-6, 86B, 89, 83B, O, E, 89T, 89-	6, 88-6,
1916-17. 10A LIBERTY. 116—12S	1919	114
1918-1910B	D. O. C. D. D.	
LOCOMOBILE.  1912-13-14	1913-14	128—18
1915		
38 LD	1918 Fruck Starting	112
1915-16-17All	PAIGE.  1914-15-16 6-38, 6-46, 36	103_11
1918	1917-18	0, 6-51.
1913-14 32, 48, 41, 6 153—89 1915-16-17 48, 41, 34 132—52	1919-20	121—201.
1318-19	PERLESS. 191338-6, 48-6, 60-6	1269
1920-21	1914-15 8-6, 48-6, 60-6. 1915 D, EE, 54, 55.	127 9
MAXWELL. 1913-14. 35-4 108—7L 1913-14. 50-6 126—2	1916FF	121—1L
1915	1916 FF 1916-176, 2nd Series, 57. 1917-18 2FF, Series 3, 1918-56	122—12L 122—P
1915-16-17. 25	191438C2. 4832	106 9
MERCER. 1913-1435G, 35H, 35M	1314-13-15	121-178
1913-1435 K, 350	1916-17-18-19 38C4, 48B4, 66A4	
1915. 22-70 140—51L 1916. 22-72 149—72L 1917. 2-73, Tour Sport, Lim 148—51L	1913	129—53
1918-19		
MITCHELL. 19132-4, 5-4, 7-4, 2-6, 5-6, 7-6114-2	1918-19. 6-C PULLMAN. 1915-16. 4-24. Pullman, Jr	119—Р
1914-16. Special 6, 8, DeLuxe, A-549, A-550. 112—1L 1915-16. Light 4, 6-16. 146—648	1915-16	134-60
1919	REGAL.	110—131
1917-18. D-40 116-6S 1917-18. C-42, 2nd Series 1916. 121-6S	1914 LC. LN, LT 1914-15 D, R. 1916-17 Light 4, Std. 4, 8, E, D, F, R.	108—1L
1919	1916-17Light 4, Std. 4, 8, E, D, F, R 1917-18J, 4-32	116—12L
1912	REO.	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	1913-14-15(R, S, M, F, T) 1916-17-18-19(F, N, M, R, S, T, V)	126—2 121—1L
1915-16	SAXON.	
1915	1915	103—1L
1316-17	1917-18	D-5, 60,
1917	SCRIPPS-BOOTH.	116—Р
1913 39, 48 132—521, 1914 4-42, 6-50 115—36B	1916-17-18C-4, D-6, D-8	129—52L 116—1S
19154=38 6=40 121_17B	1918	116—1M
1916 6-30 6-40 121—13Y 1917-18 6-43, 6-45, 6-66 121—1L 1918 6-36 116—1S	1913-14-15SK4 1913-14-15-16SK6	127—221
1918	1913-14-15-16. SK6 1915. SKL4 1916-17-18. 4 cyl. SKL4	147—788
1917-18	1310-11-10 O Cyl., SNO	149-808
1918	1913-1435, 6, E-AA	132—53
1919	1914 EB, SC, 4, 6 1915 EC, SD	108—6L
1920	1918 Series 19 1916-17-18 4-40, 6-50, ED, SF, 7, EG, EH, S	H. 121-P
NATIONAL.		
1913-14V-1. V-3	1913. E STUTZ. 1914-15-16-17. E, F, C, RI	108—2
1914	1310-13	122-11
1916-17-18. Highway 6AC, AE, AF. 119-30L	1920	122
1313	1914	126—1L
1913	1913-14-15-16-17- 8	121-11.
1914	1919. 1920. Morel 6-3 1920-21. Model 6-48-39-40A.	121
1914-15	1920-21Model 6-18-79-10.A	121
1916	1913-146-60	112-2
1916-17	1913-14 10 1914 O-39	103—2
1918	1914	121—17B
1920121	1318	16 mm
1913	WHITE.  1913-14-15-16 **OHP ! -15-16-18.40 UP, 60 HP, 45 HP, TRVCRS  1917-18 GM, T, D, C	157-97
1315 42	1917-18 GM. T. D. C.	147—79L
1916-18. 43, 44, 45-A 116-13Y 1917-19. 17 (All), 19 (45-B) 116-P 1918-19. 37, Truck 4 cyl. 116-6L	1914-15-16-17-18-21A, 22A	110—1L
1918-19		and
1920	1914-15-16-17-18.21, 22	114-1L
1917-18	1920-21	
Always give make, year and model o		

PILLAR POST MOULDS.



Casts standard plate strap without combs, making it possible to burn in all the different plate combinations in both positive and negative groups. Two bushings in \(^{5}\mathbb{g}\) and \(^{3}\mathbb{d}''\) are furnished and can be adjusted to make shoulders for uni-seal covers. Shipping weight, \(^{3}\mathbb{2}\) lbs.

#### TAPER TERMINAL MOULDS.



New, clean, bright taper terminals for every standard type can be perfectly cast with this mould. The hinged construction makes for production casting, and two-handle design enables convenient operation. Seven cores are included. One each for Dodge positive and negative, one each standard positive and negative. One U. S. L., one Exide Yolk, and one Presto-Lite. One bushing for cable lead connector. Casts terminals with double tapers for use of both rights and lefts. Shipping weight, 5 lbs.

No. 41. Mould complete with handles and instructions.

# RUBBER GLOVES.

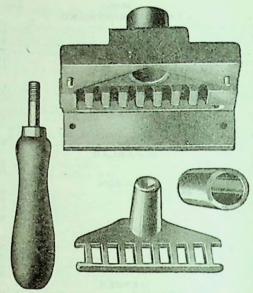


List Net.

Highest grade rubber and most perfect vulcanizing.

Formed to fit the hand.
No. 50—
Price, per pr..\$1.70

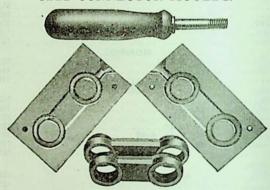
PLATE STRAP MOULDS.



By means of the sliding comb both positive and negative plate straps can be cast in 10-hole size and trimmed for any desired plate group. Trimmings thrown back into the lead pot. Two bushings for % and ¾" posts are furnished and can be adjusted to make shoulders for uni-seal covers. Shipping weight, 4 lbs.

No. 40. Mould complete with handle and instructions. \$7.50
Special additional bushings. Each. 1.00
Extra comb for Exide plates. Each. 1.00

#### CELL CONNECTOR MOULDS.



Made in individual sizes 5-7-9-11-13-15 and 19 plate. Casts cell connectors with double tapers, as each half of the mould contains one-half of the impression. Shipping weight, 3½ lbs.

No. 48. Complete, with handle and instructions.....\$4.05 State size when ordering.

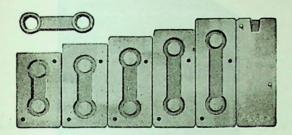
Skirt type connectors can be had in No. 48 moulds at an additional cost of \$2.50 per size.

# R. B. POST BUILDERS.



# **BESCO-PRODUCTS**

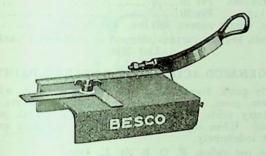
No. 1.		9."	5/8"	\$0.12
No. 2.	Exide for Ford negative	20"	5/8" 11"	.12
			13"	.12
	Exide for Ford positive		18"	.12
			7/8"	.12
			18"	.12
	Willard Str. Post		7/8"	.12
Price, t	per set	1.0	/8	. \$0.75
	Liet Net.			A POST



Includes the 7-9-11-13 and 15 plate sizes within the one mould. Construction consists of five separate cell connector moulds with single taper impression working on a master plate, virtually making five distinct cell connector moulds. Shipping wt. 10 lbs.

No. 44 Mould with handle and instructions......\$7.50

#### SEPARATOR TRIMMERS AND GRID CUTTERS.



List Net.

# BATTERY JARS.

. 7	Plate,	Low.	Each\$	0.55
7	Plate,	Medium.	Each	.57
7	Plate,	High.	Each	.80
11	Plate,	Medium.	Each	.60
11	Plate,	High.	Each	.85
13	Plate,	Medium.	Each	.70
13	Plate,	High.	Each	.90

# UNIVERSAL COVERS.

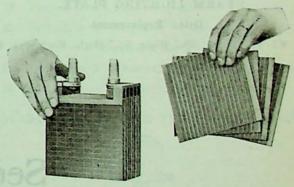
7 Plate.	Each\$	0.12
11 Plate.	Each	.14
13 Plate.	Each	.15
Vents.	Each	.06

#### WOOD BOXES FOR STORAGE BATTERIES.



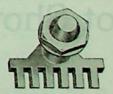
Oakland Type 6-11. Dim., long, 73/4"; wide, 64/4";	
end, ½"; high, 7½"; sides, ½"; thickness of bottom, ½". Each	\$1,25
Willard Type 6-11. Dim., long, 81/4"; wide, 63/8";	
end, ½"; high, 8"; sides, ½"; thickness of bottom,	1.25
½". Each	1.20
end, ½"; high, 7½"; sides, ½"; thickness of bot-	
tom, ½". Each	1.35
Willard Type 6-13. Dim., long, 9½"; wide, 6%"; end, ½"; high, 7½"; sides, ½"; thickness of bot-	
	1.35
tom, ½". Each	
end, ½"; high, 7½"; sides, ½"; thickness of bot-	1 40
tom, ½". Each	1.40
6¼": end, ½"; high, 7½"; sides, ½"; thickness of	
bottom, ½". Each956	1.40
Dodge Willard Type 12-7. Dim., long, 11 18"; wide,	
63/8"; end, ½"; high, 8"; sides, ½"; thickness of bottom, ½". Each	1.40
Maxwell Type 12-7. Dim., long, 1114"; wide 614";	
end, 1/2"; high, 7"; sides, 1/2"; thickness of bot-	
tom, ½". Each957	1.40

# BATTERY SEPARATORS.



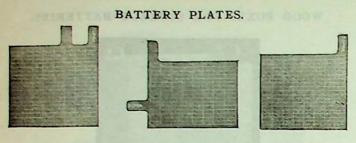
	Treat	ed P	ort Orford Cedar, Sawed.
Size	51/4x57/8x 24.	Per	100\$6.00
Size	5% x5%x &.	Per	100

### SCREW TYPE PLATE STRAPS.



For use with anchor seal and well-type cover. Compound is poured in well to depth of about 3/4". Cover heated and nut screwed down tight. Flange on nut rests on top of cover and holds cover tight. Nut has full 1/2" of coarse thread that cannot strip or come loose.

		not strip of		
3 or 4 1	hole with	nut. Price,	each193	\$0.35
5 or 6 1	hole with	nut. Price,	each206	.45
7 or 8 1	hole with	nut. Price,	each210	.45
Sealing		Price,	each 82	.20



Type L-NH. Type M-X.

Positive or Negative.

Type J.

Size	Thickness	Width	Height		Price
L	½"	5 %"	41/4"	Each, 183	\$0.42
NH	1/8"	41/4"	55%"	Each, 186	.45
M	/s"	5%"	43/4"	Each, 192	.45
X		5%"	43/4"	Each, 194	.48
J		5%"	51/4"	Each, 207	.50

# Corresponding sizes other Makes.

-	Carried States	All the second					
Superior	General	Exide	Willard	USL	Prest.	Phil	Vest
L	SR		SM	AD	WH	LL	L
			SLB				
			SL	-	I I I I I I		and the same
M	GL	LBA	CD	RH	LM	LM	L
NH	SH		SSB	F	AH	LH	S
X	XR	X	SX		JF	LT	TU
	17979		SJ			THE STATE OF	Part and
J	TJ		SA	HD		LS	
FL	DELCC	FAR	M LIG	HT F	REPLAC	EMEN	IT.
			PSW				
EH	GS		SE	GD	BH	LG	H

# FARM LIGHTING PLATE.

Delco Replacement.

Size-FL 32" Thick, 5%" Wide, 51/8" High. Each, 453 \$1.20

# GENASCO BATTERY SEAL ASPHALT.



Designed primarily for the sealing of storage batteries. Non-susceptible to temperature changes; does not crack or pull away from jars when cooled after pouring. Melting point low enough so it can be worked easily and trimmed with a hot knife or spatula. Heat asphalt until it becomes liquid, then pour into spaces to be sealed. Do not heat to a temperature over 400° F.

 Price, per lb., weight of packages included, F. O. B.,

 St. L. Div.

 10-lb. cartons. Per lb.
 \$0.07

 25-lb. cartons. Per lb.
 .065/4

 50-lb. kegs. Per lb.
 .05½

 Barrels, weight approx. 400 lbs. Per lb.
 .043/4

Barrels, kegs or cartons shipped as individual packages. List Net.

#### GENASCO ACID PROOF BATTERY PAINT.

Fairly quick drying, black glossy finish paint, will resist corrosion, gases, diluted acids and alkalies; resists attacks of battery acids. It can be applied on metal, wood or concrete. When dry it is odorless and tasteless and lasts almost indefinitely.

 Price, per gallon, F. O. B. St. L. Div.

 1-gallon cans
 \$1.18

 5-gallon cans
 .90

 50-gallon barrels
 .70

 List Net.

# See Index

For

# Hot Shot and Multiple Batteries

Also

Dry Cells

# BATTERY TERMINALS.



Made of yellow brass with a heavy coating of pure lead put on by a hot process. All parts machined to fit a positive 3/4" and a negative 1/4" post unless otherwise specified. All parts include a 1/6x11/4" lead coated nut and bolt.

#### STRAIGHT CLAMP TERMINALS.

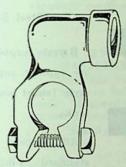
No. 1.	Positive.	Each203	\$0.75
No. 2.	Negative.	Each206	.75

#### EXIDE CLAMPS.



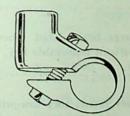
Can	be used on	Fords.	
No. 3.	Positive.	Each156	\$0.75
No. 4.	Negative.	Each	.75

# ANGLE CLAMP TERMINALS.



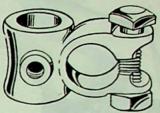
No. 5.	Positive, Left.	Each203	\$0.75
No. 6.	Negative, Left.	Each208	.75
No. 7.	Positive, Right.	Each204	.75
No. 8.	Negative Right	Fach	.75

# WILLARD TYPE TERMINALS.



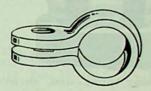
No.	9.	13"	Positive	Post.	Each153	\$0.75
No.	10.	3/4"	Negative	Post.	Each	.75

# UNIVERSAL TERMINALS FOR RENTAL BATTERIES.



No. 15.	Positive.	Price,	each203	\$1.10
No. 16.	Negative.	Price,	each206	1.10

#### MIDGET UNIVERSAL TERMINALS.



Will give 100% contact with any taper plug it is connected with. Adaptable to any size taper plug. Does not inter-fere with vent cap of battery in any way.

No. 30.	Positive.	Price, each142	\$0.50
No. 31.	Negative	Price each	.50

### TAPER PLUGS.



# Brass, Lead Coated.

# Standard Six Bolt.

No. 22.	Tapped to %"	Positive.	Each126	\$0.40
No. 23.	Tapped to %"	Negative.	Each123	.40
. 6	S	mall Six B	olt.	
No. 24.	Tapped to is"	Positive.	Each129	\$0.40
No. 25	Tanned to &"	Negative	Each 121	40

# SQUARE LEAD HEADED TERMINAL SCREWS.



No. 17.	3/8x3/4" long, 16 thread.	Each63	\$0.20
No. 18.	3/sx7/s" long, 16 thread.	Each66	.20
No. 19.	fax¾" long, 18 thread.	Each61	.20
No 20	2.v7/4" long 18 thread	Fach 68	20

#### TERMINAL BOLTS.



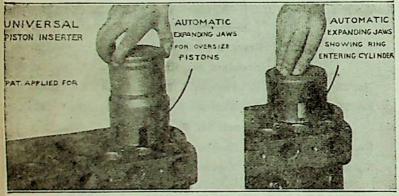
# Bolt and Nut Lead Coated.

No. 21.	rax11/4"	long.	Price,	each21/23	\$0.09
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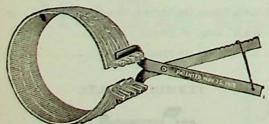
#### KILNOCK PISTON GUIDES.



#### UNIVERSAL PISTON INSERTERS.

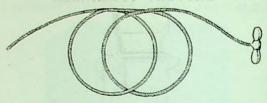


# FORD TRANSMISSION BAND TOOLS.



Made of first class steel. It holds all three bands, at one time, even and securely, or will adjust itself to any two or any one of the bands. Convenient to handle.

#### BIRD FLEXIBLE CLEANERS.



Sediment can be removed without the removal of the small pipes, which are as a rule fastened to the body or frame, saving time and labor.

No. 1. Ford Special, 30-in. long, for cleaning oil pipe on Ford cars. One in box. Wt., 4 ozs.

No. 2. Garage special, 10 feet long, for cleaning oil and gas lines on all makes of cars. One in box. Weight, 12

#### ONAN SPRING SPREADERS.



204 P. C.

# REVERSIBLE FAUCETS.







For Steel Storage Drums.

Barrels supplied in this way are rapidly supplanting the old style faucet and pump soldered tanks.

All faucets threaded to fit standard <sup>3</sup>/<sub>4</sub>-inch pipe opening, avoiding the necessity of special parts or fittings.

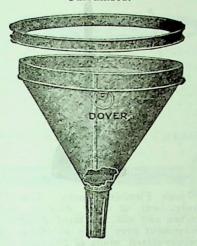
St. Louis Style. Brass, with locking device, the standard gasoline cock ingeniously changed to a drum faucet.

Duplex Style. A large brass-plated faucet. Can be furnished with or without removable key.

Peerless Style. A very satisfactory low-priced faucet, brassplated.

#### DOVER TRUCK FUNNELS.

#### Made of Extra Heavy Steel to Stand Hard Service-Galvanized.



Diam. Height No. 440. 4 qt... 9<sup>3</sup>/<sub>4</sub> inches x 11 inches. Price, each, \$2.00 No. 880. 8 qt... 12 inches x 12<sup>1</sup>/<sub>2</sub> inches. Price, each, 2.25

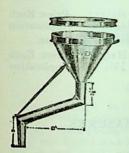
#### DOVER GASOLINE FUNNELS.

With fine brass strainers and Movable Hoop to hold chamois.



#### Heavily Copper-Plated.

Diam. Height	
No. 20. 2 qt. 8½" x 9½" Price, each	\$1.00
No. 40. 4 qt. 9¾ x 11" Price, each	1.25
For general use these are standard gasoline funnels.	the



#### DOVER TWO-IN-ONE OFFSET GASOLINE FUNNELS.

With fine brass strainer, mov-able hoop to hold chamois. Spout easily removed, thus forming a regular funnel.

#### Heavily Copper-Plated.

	2200		Cobber		
				Length	
			Diam.	Spout	- 1
No.	4000.	4 qt.	91/4"	x 10"	
Pr	ice, e	ach .			. \$3.0

# DOVER SAVAL FLEXO GASOLINE FUNNELS.



With fine brass strainers and movable hoops to hold chamois.

Copper	-Plated.
No. F1040. 4 qt	Diam. Height Body Body . 934" x 81/2" \$2.00
Length Tube, 18	
Diameter Tube, 1	inch
250	P. C.

# DOVER TWO-IN-ONE OFFSET FUNNELS.



# DOVER TIN FUNNELS.



No Strainers. Diam. Diam.

No. Top Spout 12½ 1-pt. IC..5¾" t̄s". Price, doz., \$3.00 111 1-qt. IX..6¾" ½". Price, doz., 3.50 112 2-qt. IX..8 " ¾". Price, doz., 4.75

# DOVER DUPLEX COMBINATION MEASURES AND FUNNELS.

Extra Heavy Weight.



#### Heavily Copper-Plated.

				Dia	m.	Total	Diam.	Price
				Bo	ot.	Height	Spout	Each
No. 5.	1-pt.	 	 	 31	1/2" >	534"	x 3/8"	\$1.00
No. 10.	I-qt.	 	 	 4	1/8"	x 73/4"	X 10"	1.15
No. 20.	2-qt.	 	 	 5	%" :	934"	x 1/2"	1.25
No. 40.	4-qt.	 	 	 6	1/2"	x 123/s"	x få"	1.50

#### DOVER COMBINATION MEASURES AND FUNNELS.



Plain Tin.

		Diam.	Total	Diam.	Price
		Bot.	Height	Spout	Each
No. 011/2	1-pt	31/2"	x 6 "	X 18"	\$0.65
No. 01	1-qt	4 "	x 8 "	X 18"	.70
No. 02	2-qt	5 "	x 101/4"	x 1/2"	.85
	D /	•			

#### DOVER RADIATOR FILLERS.

With Brass Strainer.



Galvanized.

No. 160. 6-quart, 7 inches diameter x 131/2 inches high;

34-inch diameter end of spout.

It is made of heavy steel and galvanized after it is made, making it absolutely rust-proof, and is guaranteed not to leak. It has a convenient pouring spout and a brass strainer to keep all dirt out of the radiator.

No. 160. Price, each ......\$2 50

#### NEW DOVER RADIATOR FILLERS.



No. 260. 3-gallon capacity, 9% inches diameter, 111/2

inches high; 11/2 inches diameter end of spout.

Our small Radiator Filler for the individual owner has met with such success that we have designed the above large size for the Garage, Filling Station and Fleet Owners.

No. 260. Price, each ......\$3.00

# DOVER GALVANIZED GARAGE FILLERS.

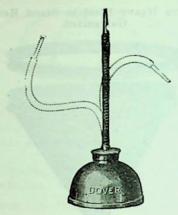
The Ideal 5-Gallon Garage Filler.



Extra Heavy. Warranted not to leak. Galvanized with

Dide Stripes.	Diam. Height
No. 15. 5-gal	
Opening in end of spout, $1\frac{1}{2}$ inches. Opening in top for filling, $4\frac{1}{2}$ inches.	
No. 15. Price, each	\$3.00
256 P. C.	

# NEW DOVER FLEXO OILERS.



All have 7-inch Flexible Spouts. The Flexible Spout may be easily bent at any desired angle and conveniently reaches and oils the most difficult places. The greatest improvement ever made in oilers. The oilers are beautifully copper-plated, made of 20-gauge cold rolled steel with clockspring steel bottoms and extra large screw mouths, easy to fill.

No. 14F. 1/2-pt. 33/4" diam. Price, each......\$0.60 

331 P. C.

# DOVER GASOLINE CANS.



Extra Heavy Weight. Galvanized, with Blue Stripes.

No. 52. 5-gal., with spout....111/8 in x 151/4 in. Application Galvanized, Painted Red and Stenciled Gasoline.

Diam. Height Price, Each No. 520. 5-gal., with spout...111/8 in. x 151/4 in. Application

#### ALL IN ONE LIQUID MEASURES.



Economical, clean and convenient. Contains your oil and delivers it where you want it by inserting the metal tube in the filler plug of your crank case, then pressing lever with thumb, which releases valve, allowing all the oil to flow where you want it without waste or muss.

#### ROSE AUTO GUNS.

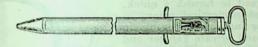


#### ROSE TRUCK AND TRACTOR GREASE GUNS.

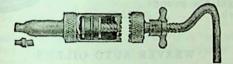


Made same as Rose Auto Gun, the difference being in capacity. 19½ inches over all. Right size for tool box. Handles all transmission greases without removing the nozzle; by removing nozzle it will handle heavy cup greases. Capacity 1 lb. grease or oil. Packed one in carton, 6 cartons in case. Weight, 12 lbs.

#### ROSE SHOP GREASE GUNS.



# SILVER GIANT GREASE GUNS.

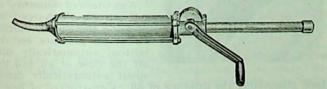


#### For Oil and Grease.

All materials are of selected and tested standards of quality. The tubing is of standard 16 gauge, drawn steel tubing. The plunger is of heavy ½-inch steel shafting, carefully machined and accurately threaded. The leather washers, ½-inch thick, cupped ¾-inch, specially treated to stand wear and grease.

Price, each ......2756 \$3.50

# BOE COMBINATION GREASE AND OIL GUNS.



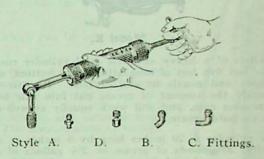
#### HANDY OIL GUNS.



No. 8.

Made of heavy drawn brass tubing, nickel-plated, double leather plungers, and long curved spout. Cylinder 11/4x8 inches.

#### REX HIGH PRESSURE GREASE GUNS.



2,000 lbs. pressure with one hand without a leak. The swivel joint enables the user to reach all bearings with ease.

 Price, Rex Grease Gun, each
 4007
 \$6.00

 Price fittings, each
 102
 15

Standard Dealers Package, consisting of three Rex Grease Guns and an assortment of fittings, put up in wood display cabinet with installation charts showing fittings required for different cars.

#### Fittings for Rex System.

These replace grease and oil cups.

Style A. Use this for almost all lubricating points. Standard %-inch pipe thread.

Style B. Install these 45° angle fittings where they add to the convenience of the user.

Style C. .90° furnished for occasional places where neither A nor B can be used.

Style D. With female thread, these are for use in connection with extension nipple.

Bushings E and F. These are bushings supplied in order to connect Style A, where the thread is other than \(^1\)standard pipe.

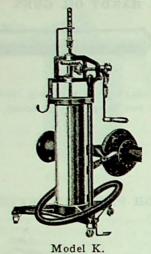
Bushing E. 1/4-inch pipe thread inside by 1/4-inch pipe thread outside.

Bushing F. 1/4-inch pipe thread inside by 3/4-inch pipe thread outside.

Bushing G. 1/4-inch pipe thread inside by 1/4-32 machine thread outside.

In addition to the above, we also furnish extension nipples, couplings and adapters for use where the grease cup is integral with the bearing and cannot be removed. Dust caps are furnished with all fittings.

# (F) EKERN PORTABLE GARAGE GREASE GUNS.

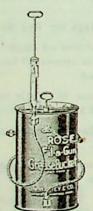


Consists of a heavy seamless steel cylinder mounted on wheels, has five feet of hose attached to bottom, with shutoff valve and nozzle at end of hose. Register measures
accurately the amount of grease put into axle housing or
transmission case, and will work equally as well on liquid
oil as on hard grease.

The cylinder is 20 inches long by 6 inches in diameter; capacity, 20 pounds of grease or 2½ gallons of oil. The piston is covered with best quality cup-shaped leather, and is provided with an expansion ring in piston which eliminates grease and oil from leaking by the piston. The piston also has an automatic air vent to release the vacuum in the cylinder when cranking the piston up for refilling. The base is provided with a locking device, which lifts the castors up from the floor when cranking.

The same indicator is used for grease and liquid oil. Grease indicates pounds; Liquid Oil indicates pints.

# ROSE GREASE BUCKETS.



(F) Goods marked (F) not carried in stock, shipment from factory.

#### WEAVER VALVELESS BUCKET PUMPS.



For handling engine oils and light greases, this Bucket-Pump is the most convenient and practical equipment of this kind on the market. It eliminates all waste of lubricant and enables it to be handled with absolute convenience and accuracy.

The lubricant can be forced out of the bucket and into the car. Old grease or oil can be sucked out of the differential, transmission housing, etc. Cylinder has capacity of 1 lb. of grease or heavy oil.

Equipped with %-inch Flexible Steel Hose which is not affected by grease.

Bucket proper is made of heavy sheet iron and has 25-lb. capacity. Cylinder is of 2-inch 18 gauge brass, containing a double cup leather plunger that will not leak and is impervious to action of lubricant.

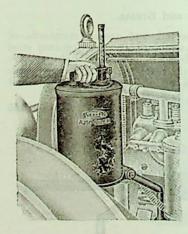
Shipping weight, 25 lbs.

# WEAVER SAFETY SERVICE CANS.

The new Weaver Safety Can is designed to furnish a quick, safe and economical means of handling fuel and lubricants in public and private garages and by owners of trucks, tractors and motor boats. By inserting nozzle in vent in screw cap, can is rendered practically air tight, preventing evaporation, contamination and spilling, and reducing danger from fire. Flexible steel hose will reach opening to any fuel tank. Ruggedly constructed of galvanized iron, strengthened by horizontal ribbing and with reinforced bottom. Capacity, 5 gallons. Shipping weight 8½ pounds. Price, each .......3756 \$5.00



#### WEAVER AUTO OILERS.



The long spout of heavy brass tubing can be turned downward so that it can be easily inserted into the oil opening of the engme, which is often so obstructed by the manifold or other engine attachments that the ordinary type of funnel cannot be used satisfactorily.

Oil Released by Thumb Button.

Any desired quantity of oil can be discharged by pressing the thumb button. Relieving pressure on the bottom automatically cuts off the flow of oil and the spout automatically drains

itself, eliminating the dripping of oil. Constructed of heavy galvanized iron and has a capacity of two gallons. The indicator is very accurate, being controlled by a compensating float which will accommodate itself to the "wash" of the oil.

Shipping weight, 10 lbs.

#### WESTERN FIVE-GALLON VISIBLE COMBINATION PUMPS.

Visible Glass Cylinder—Is made of heavy, clear flint glass, the figures on same being in bright red and black arrows indicate liquid level line. The cylinder is protected by a metal screen which is removable. Cylinder is securely fitted to top and bottom castings by six stay rods and by removing the nuts from bottom of stay rods, cylinder may be taken down at any time inside should require cleaning.

Cabinet—The cabinet or pump housing is made of sheet metal, the door being lowered to open cabinet, when door is raised it automatically fastens and is locked by a brass padlock. The door slides work in grooves and door is raised and lowered with little effort.

Pump—Is Long Distance Piston type, adjusted to measure 1 2, 3, 4 or 5 gallons at stroke, 9-inch seamless brass cylinder, 3/4-inch brass piston rod; heavy brass valves and stuffing box; cut steel gears bronze bushed and protected by gear guard; case hardened bearings and spindles. The pump measures the exact amount desired into the glass container, the latter merely acting as a check on the pump and to show customer just what he is receiving.

Automatic Gear Shift-For quick return of rack bar, which can be reversed in a ratio of one reverse motion to five forward turns.

Gallon Meter—Keeps an accurate check on all gasoline drawn up to 99999 gallons at which point it reverts to 00000, making it a continuous meter. The figures are large and legibly stamped into the metal, it is built with the precision of a watch.

Filter—Is mounted on pump plate and all gasoline is filtered and strained from water and other impurities before it enters glass cylinder. The accumulation of foreign matter may be drained from filter at will.

Automatic Hose Drain-An automatic drain valve is attached to pump which allows hose to drain out clean as soon as flow stops.

Hose and Filling Nozzle—With each pump we furnish 10 feet of 1-inch metal hose, rubber and cotton covered and having adjustable brass couplings, the filling nozzle is fitted with fine brass removable strainer.



Shut Off Cock—Pump is equipped with an instantaneous shut off cock, by merely raising or lowering the lever the supply line is opened or closed.

ASOLINE

WES ER

FILTERES GASOLIVE

Electric Lamp—A 12-inch canteen shaped globe is furnished, fitted with socket inside for lamp and two weather proof fibre sockets are located on top on either side of glass cylinder. Wires are ready for connecting to local circuit. No lamps furnished.

Removable Pump Handle—Handle may be slipped off and carried inside of building, making pump fool and meddler proof.

Quantity Stops—For 1, 2, 3, 4 or 5 gallons are located in front on pump standard; to change measurement it is but necessary to push in the nickeled disc stamped with the quantity desired, turn pump handle and the exact amount is discharged into glass container above.

Finish—Pump and cabinet are highly finished in vermillion enamel, with nickel trimmings and gold lettering. Other colors at the option of purchaser.

Dimensions of Pump.—Height 9 feet, 9 inches, diameter 15 inches; shipping weight 550 lbs., 2-inch suction pipe.

Guarantee—We guarantee outfits to be as represented and we agree to make good any defects in material or workmanship which may develop within one year from date of sale.

Tanks—Are built of either 12 or 14 gauge galvanized steel, welded throughout, except the flanges which are riveted and welded to tank, this making a leak proof tank. Furnished complete with double brass foot valves, suction pipe in tank, 3½-inch by 2-inch reducing plug; double fill pipes with strainers, lock cap, lock and keys and with measuring stick to determine amount in tank. Each tank is fitted with three flanged openings, 2-inch for fill pipe, 1-inch for overflow return pipe and 3½-inch for reducing plug and

2-inch suction pipe. Tanks are inspected and bear the approval label of the National Board of Fire Underwriters. Prices on larger tanks and of heavier steel furnished upon application.

# Prices.

#### WITH 12-GAUGE TANKS.

CAPA	CITY	Shipping	
Bbls.	Gals.	Weight	Price
2	120	780 lbs.	\$420.00
3	170	840 lbs.	435.00
4	220	900 lbs.	450.00
5	280	960 lbs.	465.00
7	390	1,050 lbs.	495.00
9	500	1,160 lbs.	525.00
10	550	1,200 lbs.	540.00
15	800	1,400 lbs.	600.00
18	1,000	1,680 lbs.	635.00
20	1,100	1,780 lbs.	660.00

#### WITH 14-GAUGE TANKS.

CAPA	CITY	Shipping	
Bbls.	Gals.	Weight	Price
2	120	 740 lbs.	\$410.00
3	170	 790 lbs.	422.00
4	220	 840 lbs.	434.00
5	280	 890 lbs.	446.00
7	390	 990 lbs.	470.00
9	500	 1.070 lbs.	494.00
10			506.00

14-gauge tanks made only up to 10-bbl. size.

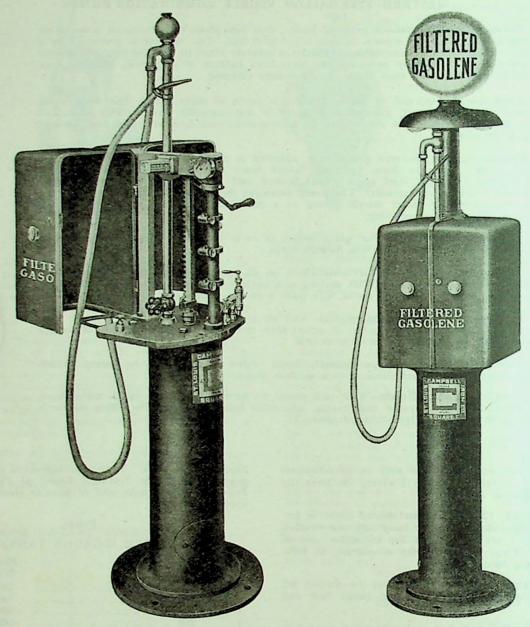
Above prices include lag bolts for fastening pump, locks and keys and two 2-inch galv, pipe unions.

Price of pump only without tank, \$380.00.

All prices are F. O. B., St. Louis, Mo.

SQUARE C GASOLINE FILLING STATIONS.

Pump Measuring Pints, Quarts, Half Gallons or Gallons.



#### STANDARD EQUIPMENT.

Cabinet.—The cabinet encasing Pump is built of in-inch iron; the doors overlap, making it weather-proof; doors are fitted with best Corbin six-tumbler lock; a small door at bottom of pedestal gives access to drain cock of filter chamber and to pipe union.

Pump.—Is our Long Distance type, adjusted to measure Gallons, Half-gallons, Quarts or Pints at a stroke; is built entirely of metal, with cylinders, valves, plunger rod and stuffing box of brass; cut steel gears; balance of pump is of heavy cast and wrought iron; requires but two and one-half turns of the handle to discharge a gallon, giving pumping capacity of 13 gallons per minute.

Gallon Meter. Keeps an accurate check on all gasoline drawn up to 9999 gallons, at which point it reverts to 0000, making it a continuous meter. Every tenth of a gallon is shown in red figures, so value of oil may be computed in 10ths if sold in small quantities.

Gravity Filter. Is attached below pump cylinder, and made an integral part of pump. It strains the gasoline from water and other impurities, which gravitate the settling chamber, and is drawn off through auxiliary pump which is attached to pump plate. The pump is securely locked when not in use.

Discharge Register. This device automatically tallies every gallon pumped, from 0 to 10 gallons, and is reversible from any point.

Independent Discharge Nozzles.—Pump is fitted with discharge openings on either side, one for attaching hose, the other for filling cans, the cocks being entirely independent of each other.

Hose and Filling Nozzle.—The 1-inch discharge pipe extends 20 inches above Pump, and terminates in an automatic air vent valve, that allows the oil in the hose to drain, to this vent fitting is attached 8 feet of our 1-inch steel-lined hose, with brass filling nozzle.

# SQUARE C GASOLENE FILLING STATIONS-Continued.

Automatic Door Stop .- Holds door rigid while operating Pump.

Removable Pump Handle. Handle can be slipped off and carried in the building, making pump fool and meddler-proof.

Quantity Stops.—Are located in front on pump standard, to change measurements, it is but necessary to push in the nickeled disc stamped with the quantity desired, give one stroke of the handle, and the exact amount is obtained.

Finish.—Pump and cabinet are highly finished in Vermilion enamel, with gold lettering and nickel trimmings.

Tanks.—Are built in any capacity of either 12 or 14 gauge galvanized steel. Tanks are tested, labeled, and approved by the National Board of Fire Underwriters.

#### EXTRA ATTACHMENTS.

Electric Lamp. Only furnished when so ordered, and at additional cost.

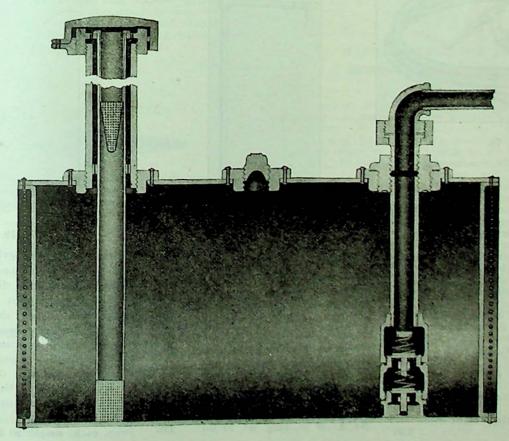
#### Capacity:

2	Bbls.	120 G	als,	12-Gauge	Tanks.	Weight,	660 lbs.	Each\$225.00	14-Gauge Tanks.	Weight, 600 lbs.	Each \$214.00
3	Bbls.	170 G	als.	12-Gauge	Tanks.	Weight,	720 lbs.	Each 240.00	14-Gauge Tanks.	Weight, 650 lbs.	Each 226.00
4	Bbls.	220 G	als.	12-Gauge	Tanks.	Weight,	780 lbs.	Each 255.00	14-Gauge Tanks.	Weight, 700 lbs.	Each 238.00
5	Bbls.	280 G	als.	12-Gauge	Tanks.	Weight,	840 lbs.	Each 270.00	14-Gauge Tanks.	Weight, 750 lbs.	Each 250.00
7	Bbls.	390 G	als. 1	2-Gauge	Tanks.	Weight,	950 lbs.	Each 300.00	14-Gauge Tanks.	Weight, 800 lbs.	Each 274.00
- 10	Bbls.	550 G:	als. 1	2-Gauge	Tanks.	Weight,	1100 lbs.	Each 345.00	14-Gauge Tanks.	Weight, 900 lbs.	Each 310.00

Extra for Electric Lamp, \$25.00.

We can furnish additional 2-inch galvanized pipe, if wanted, at extra prices.

Cash Price, 103 P. C.



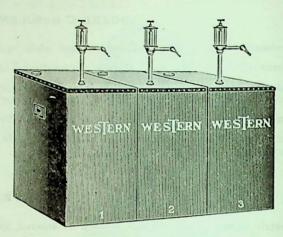
Sectional View Showing Construction of Tank and Parts.



The bushing that attaches pump to barrel has two sizes of threads for screwing into  $1\frac{1}{2}$  or 2-inch threaded openings; fitted with ball bearing air vent on top. Measuring cylinder is made of heavy, clear glass. When the pump is operated the oil is discharged into the glass cylinder and all oil in excess of a quart flows back into barrel through overflow pipe.

Shipping weight, 20 lbs.	
Lots of one, price, each	
Lots of 12, price, each	20.90
Lots of 25, price, each	19.80
103 P. C.	

WESTERN BATTERY OIL TANKS.



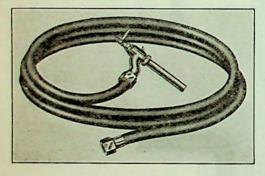
Battery of small tanks mounted with visible measure; quart pumps suitable for locating outside.

The tanks are 12½ inches long, 12½ inches wide by 24 inches high, having a capacity of 15 gallons. Built of heavy steel, welded throughout, making them leak proof and practically indestructible; fitted with 4-inch screw cap for filling, and with handle on each side. Finished two coats olive green enamel. Shipping weight, 50 lbs.

Price, each unit.....\$32.00

103 P. C.

# HOSE AND FILLING NOZZLES.



No. 74.

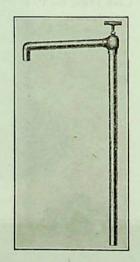
Hose is especially constructed for handling gasoline, has heavy duck inner lining reinforced by steel spirals, so gasoline does not come in contact with the rubber outer coating.

The nozzle is made entirely of brass, leakproof, as top is enclosed, requires but a three-quarter turn to open or close. A 6-inch removable extension at bottom is fitted with fine brass cone shaped removable strainer. Both hose and nozzle are approved by the Underwriters.

Hose is furnished in 6, 8, 10, 12, 15, 20, or 25-foot lengths. Prices include brass male and female couplings attached.

104 P. C.

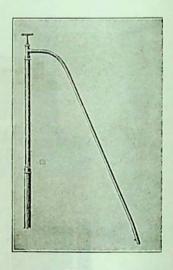
TRANSFER PUMPS.



No. 15.

For transferring oil from barrel to tank. Pump is built very substantially and should last a lifetime. It should not be compared with the cheap tin transfer pumps. The cylinder, pump chamber, discharge arm, plunger and valves and stuffing boxes are all brass. Discharge arm is 18 inches long. Made in three lengths:

No. 1. 36 in. long, wt. 15 lbs....\$5.00 No. 2. 42 in. long, wt. 17½ lbs... 6.00 No. 3. 48 in. long, wt. 20 lbs... 7.00 SIPHON PUMPS.



No. 19.

Has 1½-inch brass cylinder, 12 inches long, brass plunger and valves, 1-inch suction pipe, ¾-inch discharge pipe.

To operate, insert cylinder into barrel, give a few short strokes to start the flow, and in a short time the oil will have been transferred without further attention from the operator. Barrel being emptied should be placed on a higher level than tank being filled. Length of suction pipe, 36 inches.

Price, each, weight 20 lbs......\$5.00

102 P. C.

107 P. C.

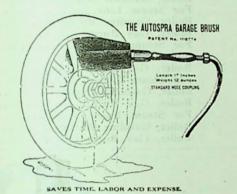
#### ROMORT ENGINE CLEANERS.



With the long spout the operator reaches every nook and corner of the machinery, a very difficult and almost impossible feat with the old method of rags and waste. The cleaner holds two quarts of fluid (common coal oil is the best); this quantity is usually sufficient to clean the largest engine. Air may be supplied from any system that produces from 20 to 200 pounds pressure. We highly recommend garage storage air systems. When attached to the air supply, fluid is forced out in a heavy spray, consisting of fluid and air, requiring not over five minutes' time to thoroughly clean the machinery.

Size, 201/2 inches long by 4 inches diameter. Weight, 2 lbs.

#### AUTO-SPRA GARAGE BRUSHES.



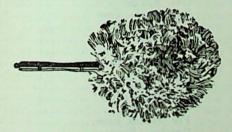
The leading fountain brush; easy to use; gets at the hard-to-reach places; quickly attached to any standard hose coupling; simple, compact, strong and durable; no loose movable parts; no set screws; long handle gives plenty of reach; will not scratch.

#### STAR H SPOKE BRUSHES.



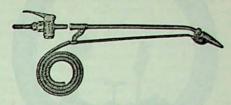
Extra grade China bristles, gripped in galvanized steel wire; black enamel hardwood handle; length, 18 inches. A practical brush of great strength and durability.

#### STAR H UPHOLSTERY BRUSHES.



Fine, fluffy Sea Island cotton, various colors mixed; black enamel hardwood handle. A fine washable duster for upholstery and fine surfaces.

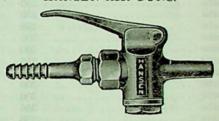
#### HANSEN ENGINE CLEANERS.



A combination Air Gun and Engine Cleaner; can be used with kerosene or other liquids, and the most satisfactory results obtained in the removal of grease and dirt from automobile engines or other machinery parts. Needle valve provides a graduated adjustment of the spray from heavy to light, as may be desired. A stem for use in connecting air lines is furnished with engine cleaner. Made in ¼-inch, ¾-inch and ½-inch sizes. In ordering specify the size of stem wanted.

Six feet of metallic tubing with each outfit; all brass nickel finish.

#### HANSEN AIR GUNS.



For use in garages or any place where an air gun is desired.

A stem for use in connecting the air line is furnished with each gun. Made in ¼, ¾ and ½-inch sizes. In ordering specify size wanted. All brass nickel finish.

Price, each .....\$2,50

103 P. C.

# HANSEN EXTENSION NOZZLES.



For use in connection with air gun. Can be readily attached and detached from air gun by means of a taper connection. A desirable attachment for use in blowing loose carbon from cylinders, dusting cushions and other purposes where an extra length nozzle is desired.

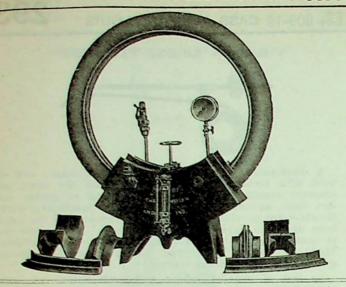
Length, 10 inches. All brass, nickel finish.

# IMPERIAL MOTOR CLEANERS.



For cleaning motors and all sorts of machinery from grease, oil and dirt. Simply hook up to the tire air chuck on your compressed air line and drop the end of hose into a can of kerosene and then screw up thumb nut which forces nut to a seat and turns on air. One in box and equipped with yoke and thumb screw which fits all makes of tire air chucks and an extra air hose nipple for use in permanent work without tire air chuck.

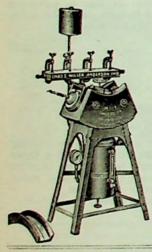
No. 20-C. Price, each ......\$2.50



Miller's one-cavity en bloc vulcanizers are furnished in all sizes and styles from 1½-inch to 12-inch cavities inclusive. All equipped with special patented features such as air-cooled flanges to prevent the marking of tires, cast enbloc, adjustable bead molds and many other points of advantage. Clincher and straight-side bead molds are furnished as regular equipment without extra charge. Vulcanizers as listed below furnished complete for steam line but can be had in other styles upon request.

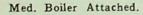
Single Cavity Sectional.

		Approx.	Widthof		
Catalog	Name and Kind of	Shipping	Cavity	Sizes of Tires	
No.	Sectional Vulcanizer	Weight	Inches	to Repair	
1X	Auto	150	3	Special 3	For Steam Line\$30.00
IXD	Auto	200	3	Special 3	Boiler, Gasoline Burner 38.50
1	Auto	200	31/2	3, 31/2, 4	For Steam Line 36.00
1D	Auto	250	31/2	3, 31/2, 4	Boiler, Gasoline Burner 44.50
1E	Auto	250	31/2	3, 31/2, 4	Boiler, Gas Burner 43.00
2X	Auto	250	4	Special 4	For Steam Line 37.00
2XD	Auto	300	4	Special 4	Boiler, Gasoline Burner 45.50
2XE	Auto	300	4	Special 4	Boiler, Gas Burner 44.00
2	Auto	250	41/2	4, 41/2, 5	For Steam Line
2D	Auto		41/2	4, 41/2, 5	Boiler, Gasoline Burner 47.00
2E	Auto		41/2	4, 41/2, 5	Boiler, Gas Burner
3X	Auto		5	Special 5	For Steam Line 48.50
3XD	Auto		5	Special 5	Boiler, Gasoline Burner 57.00
3XE	Auto	350	5	Special 5	Boiler, Gas Burner 55.50

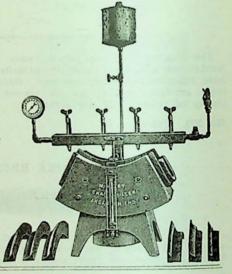


# ONE-CAVITY EN BLOC SECTIONAL VULCANIZERS.

All one-cavity en bloc vulcanizers can be assembled with high or low stand, fitted with boiler, gas or gasoline burners. All Miller's vulcanizers fitted with perfected air-cooled flanges have exclusive patented features, enabling the repairman to make a perfect repair on all tires in appearance as well as strength. Clincher and straight-side bead molds of popular sizes together with cavity clamps and tube clamps are furnished as regular equipment without extra charge. All sizes of these vulcanizers can be had in cavities from 1½-inch to 12-inch inclusive.



Small Boiler Attached.

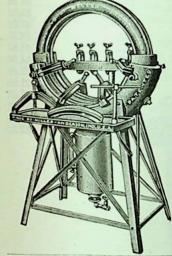


Catalog	Name and Kind of			Approx.	Furnished Complete
No.	Sectional Vulcanizer	Width of	Sizes of Tires	Shipping	Boiler, Gasoline, Gas
	Inner Tube (24x4) attached	Cavity	Repair	Weight	or Steam Line Price
1XA	Auto Tire & Tube		Special 3	250	Gasoline Burner\$48.50
1XB	Auto Tire & Tube		Special 3	250	Gas Burner 47.00
IXC	Auto Tire & Tube		Special 3	200	For Steam Line 40.00
1A	Auto Tire & Tube		$3, 3^{1/2}, 4$	250	Gasoline Burner 54.50
1B	Auto Tire & Tube		3, 31/2, 4	250	Gas Burner 53.00
iC	Auto Tire & Tube		3, 31/2, 4	200	For Steam Line 46.00
2XA	Auto Tire & Tube		Special 4	300	Gasoline Burner 55.50
2X.B	Auto Tire & Tube		Special 4	300	Gas Burner 54.00
2XC	Auto Tire & Tube		Special 4	250	For Steam Line 47.00
2A	Auto Tire & Tube		4, 41/2, 5	300	Gasoline Burner 57.00
	Auto Tire & Tube		4, 41/2, 5	300	Gas Burner 55.50
2B 2C	Auto Tire & Tube		4, 41/2, 5	250	For Steam Line 48.50
	Auto Tire & Tube	2.00	Special 5	350	Gasoline Burner 67.00
3XA	Auto Tire & Tube		Special 5	350	Gas Burner 65.5
3XB	Auto Tire & Tube		Special 5	300	For Steam Line
3XC			5, 51/2, 6	1767 7	To Steam Diffe
3A	Truck Tire & Tube			350	Gasoniae Burner
3B	Truck Tire & Tube		5, 51/2, 6	350	Gas Burnet
3C	Truck Tire & Tube	51/2	5, 51/2, 6	300	For Steam Line 60.00



All 3, 4 and 5 cavity embloc vulcanizers come to the purchaser set up and assembled, so that after removing crate the vulcanizers can be in operation in very short time, which overcomes a great deal of expense in installations Three-cavity enbloc vulcanizers have cavities measuring 3, 3½ and 4½ inches Four-cavity vulcanizers 3, 3½, 4 and 4¾ inches. Five-cavity enbloc vulcanizers ers 3, 31/2, 31/2, 4 and 41/2 inches. All of these vulcanizers will make any necessary repairs on all sizes and styles of casings from 21/2 to 5 inches inclusive, besides repairing all sizes of inner tubes. The blowout is cured perfectly from bead to bead in one heat. All Miller vulcanizers are equipped with air-cooled flanges and have special patented features which will prevent the unsightly bumps commonly seen at the end of the repaired section. All necessary clincher and straight-side bead molds, cavity clamps and tube clamps are furnished with the outfit as regular equipment without extra charge, We strongly recommend that purchase of the 4 or 5-cavity enbloc vulcanizers be made in preference to the 3-cavity, as they have from 25 to 40 per cent more curing capacity for most popular sized casings,  $3\frac{1}{2}$  and 4-inch. Reducing shells are only a partial success, and we have, therefore, overcome the necessity of their use by furnishing 4 and 5-cavity vulcanizers. Correct heat cannot be had unless perfect contact be given. Outfits can be had in any styles or sizes to suit the purchaser.

Catalog No.	Width of Cavities Inches	Pairs Bead Mold	Kind and Style of Attachments Furnished with Fittings, Bead Molds, Clamps, Complete	Approx. Shipping Weight Lbs.	Price
20	3, 31/2, 41/2	5	Nos. C-1, 254, 49, for Steam Line	550	\$138.50
21	3, 31/2, 41/2	5	Nos. C-1, 254, 49 Boiler, Gas Burner	650	173.50
17-F	3, 3½, 4½	5	Nos. C-1, 254, 49, Boiler, Force Feed		
70,50			Gasoline	675	186.50
28	3, 31/2, 4, 43/4	7	Nos. C-1, 254, 49, for Steam Line	650	153.50
31	3, 31/2, 4, 43/4	7	Nos. C-1, 254, 49 Boiler, Gas Burner	750	188.50
30-F	3, 3½, 4, 4¾	7	Nos. C-1, 254, 49, Boiler, Force Feed		
11.22			Gasoline	775	201.50
380	3, 31/2, 31/2, 4, 43/4	9	Nos. C-1, 254, 49, for Steam Line	700	173.50
381	3, 31/2, 31/2, 4, 43/4	9	Nos. C-1, 254, 49 Boiler, Gas Burner	800	208.50
382-F	$3, 3\frac{1}{2}, 3\frac{1}{2}, 4, 4\frac{3}{4}$	9	Nos. C-1, 254, 49, Boiler, Force Feed		
			Gasoline	825	221.50



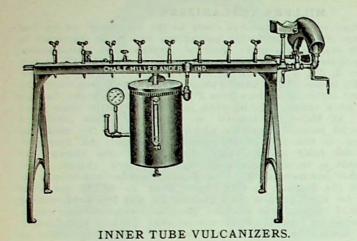
#### The most complete perfect equipment on the market, being one-half circle with extra deep cavities and steam space extending up the side walls to heat the entire surfaces so that bead molds can be used. All kinds of work, such as RIM CUTS, BLOWOUTS, BEAD CUTTING, RE-TREAD. ING AND RE-BUILD-ING can be done to perfection with sandbags or The cavity air-bags. clamps are extra strong with extra large screws,

#### ALL-IN-ONE.

and quick to operate, having a hinged joint which permits instant placing on or removal from mold to any number desired. Extra long air-cooled flanges are provided which is one special patented feature of this outfit. All kinds of fancy treads can be duplicated by using special Matrix Compound that we furnish at a small extra cost. Regularly furnished with ribbed tread design or smooth raised type. Outfit can be had in any styles to suit purchaser for steam line, with or without boiler, stand or any attachments. Five pressure clamps, pressure plate, clincher and straight-side bead molds are furnished as regular equipment without extra cost.

No.	Width of Cavity	Repair Sizes	Description, Style and Attachments, furnished with fittings complete 5-cavity clamps, pressure plate, Clincher and Straight-Side Bead Molds	Approx. Shipping Weight Lbs.	Price
503	31/2	3-3½ 31x4	Plain Mold for steam line, less stand	250	\$119.00
503-A	31/2	3-31/2 31x4	Plain Mold, stand, tool shelf for steam line	275	131.75
503-B	31/2	3-3½ 31x4	With tool shelf, boiler gas, less tube vul	325	148.75
503-C	31/2	3-3½ 31x4	Complete, tool shelf, tube vul., boiler gas	375	157.25
504	41/2	4-41/2	Plain Mold for steam line, less stand	300	148.75
504-A	41/2	4-41/2	Plain Mold, stand, tool shelf for steam line	350	161.50
504-B	41/2	4-41/2	With tool shelf, boiler gas, less tube vul	450	191.25
504-C			Complete, tool shelf, tube vul., boiler gas	500	199.75
505	41/2	4-41/2	Plain Mold for steam line, less stand	350	178.50
505-A	51/2	5-51/2	Plain Mold, stand, tool shelf for steam line	375	191.25
NAME OF TAXABLE PARTY.	51/2	5-51/2	With tool shelf, boiler gas, less tube vul	500	221.00
505-B	51/2	5-51/2	Complete tool shelf tube yell boiler gas	550	229.50
505-C	51/2	5-51/2	Complete, tool shelf, tube vul., boiler gas	000	223.00

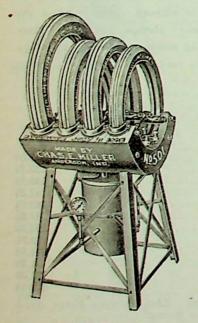
Note—Improved Gasoline Force Feed Outfit furnished instead of Gas Burner, \$12.75 extra. This includes Force Feed 8 gallon tank, 12 feet hollow copper tubing, all valves, fittings, gauge, etc., Improved Gasoline Burner.



Made in four sizes: (A) 54x4", (B) 45x6", (C) 24x4", (D) 30x7¼". Furnished for steam line or gas or gasoline burners and boiler. All clamps and working parts furnished as regular equipment without extra charge.

Style E Tube Vulcanizer (30x71/4 inches) Is Made Specially for Using Rubber Boot and Shoe Repair Appliances.

	Size of Surfac	e				
Cata-	Tube	Size of	Number	Description of Style Furnished	Approx.	
log	Vulcanizer	Clamps	of Clamps	Miller's Inner-Tube Vulcanizers	Weight	
No.	inches	inches	Furnished		Lbs.	Price
C-1	24x4	4	4	For Steam Line	50	\$10.00
C-2	24x4	4	4	Stand for Steam Line	100	18.00
C-3	24x4	4	4	Boiler, Gas Burner, without stand	150	30.00
C-4	24x4	4	4	Stand, Boiler, Gas Burner, complete	200	38.00
C-5	24x4	4	4	Boiler, Gasoline Burner, without stand	150	31.50
C-6	24x4	4	4	Stand, Boiler, Gasoline Burner, complete	200	39.50
A-1	54x4	4	8	For Steam Line	100	16.50
A-2	54x4	4	8	Stand for Steam Line	150	24.50
A-3	54x4	4	8	Boiler, Gas Burner, without stand	150	36.50
A-4	54x4	4	8	Stand, Boiler, Gas Burner, complete	250	44.50
A-5	54x4	4	8	Boiler, Gasoline Burner, without stand	200	38.00
A-6	54x4	4	8	Stand, Boiler, Gasoline Burner, complete	250	46.00
E-1	30x7 <sup>1</sup> / <sub>4</sub>	6	6	For Steam Line	110	25.00
E-2	30x71/4	6	6	Stand for Steam Line	175	33.00
E-3	30x71/4	6	6	Boiler, Gas Burner, without stand	200	45.00
E-4	30x71/4	6	6	Stand, Boiler, Gas Burner	275	53.00
E-5	30x71/4	6	6	Boiler, Gasoline Burner, without stand	. 200	46.50
E-6	30x71/4	6	6	Stand, Boiler, Gasoline Burner	275	54.50
B-1	45x6	6	6	For Steam Line	125	23.00
B-2	45x6 .	6	6	Stand for Steam Line	175	31.00
B-3	45x6	6	6	Boiler, Gas Burner, without stand	225	43.00
B-4	45x6	6 .	6	Stand, Boiler, Gas Burner	290	51.00
B-5	45x6	6	6	Boiler, Gasoline Burner, without stand	230	44.50
B-6	45x6	6	6	Stand, Boiler, Gasoline Burner	290	52.50
D-0	OXGE	0	U	otalia, boliet, outonic bulliet in the interior	200	02.00



Ribbed Retreader.

#### MILLER'S RETREADERS.

All four molds cast enbloc made hollow so steam is admitted, cavities 31/4, 41/4 and 51/4 inches. Double capacity for 31/2 and 4-inch tires, most popular sizes. Retreading can be accomplished by the use of sandbags or air bags. Fitted with special patented insulated air-cooled flanges to prevent marking the tires. All clamps and working metal parts furnished as regular equipment without extra charge.

Price List Four-Cavity Retreader.

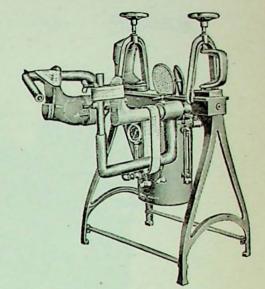
Catalog		Weight	
No.	Description of Retreader and Parts Furnished	Lbs.	Price
500	Stand, less Boiler, for Steam Line	600	\$180.00
501	Stand Boiler, Gas Burner	700	225.00
502-F	Stand, Boiler, Force Feed Gasoline	725	238.00

154 P. C.

Any repair necessary, on rubber boot, shoe or other rubber footwear can be done perfectly with this outfit. By using several attachments which may be had separately from unit so that same can be connected with steam line and used independently as listed. In the outfit complete set (7 pr.) of sole plates and heel molds (3 pr.) are furnished as well as all clamps and attachments for operating same as regular equipment without extra charge. Half-sole outfits as well as Improved Inside Boot vulcanizer are listed separate as given below.

#### Price List Rubber Boot-Shoe Vulcanizers.

	ping
Description Style Sizes Furnished and Ports Complete We	ight
Lbs	. Price
Complete Outfit, for Steam Line 400	\$120.00
Complete Outfit, Boiler, Gas Burner 500	155.00
Complete, Boiler, Force Feed Gasoline 525	168.00
Inside Boot Mold, Large, for Steam Line 100	22.00
Inside Boot Mold, Small, for Steam Line 80	20.00
Half-Sole, Heel Outfit, Full Set Molds, 2 each Clamps 125	46.00
	Description, Style, Sizes Furnished and Parts Complete  Complete Outfit, for Steam Line. 400  Complete Outfit, Boiler, Gas Burner 500  Complete, Boiler, Force Feed Gasoline. 525  Inside Boot Mold, Large, for Steam Line. 100  Inside Boot Mold, Small, for Steam Line. 80  Half-Sole, Heel Outfit, Full Set Molds, 2 each Clamps. 125

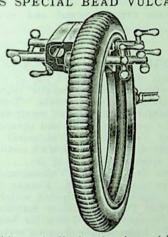


#### MILLER'S HORIZONTAL TEST TANKS.



Provided with arms on inside whereby tube can be entirely submerged in water, giving efficiency in finding small leaks.

No. 292. Miller's Horizontal Test Tank.



All straight side and clincher bead repairing, as well as side wall repairing can be effected by the use of this outfit. A special clamp is provided on either side mold which retains any ordinary 3x16" air bag. By tightening clamp and inflating air bag against side walls of tire even pressure is obtained over uneven surfaces throughout the cure. Repairs 16" section in one Heat.

Cata-		Approx.	
log	Size of Tires	Description of Style Bead Weight	
No.	Repair	Vulcanizer for Steam Line Lbs.	Price
		Air Bag Clamp System, small sizes 50	14.00
	4 to 6 inch	Air Bag Clamp System, large size	15.00
245	All sizes	3x16 Bead Vulcanizer Air Bag	3.00

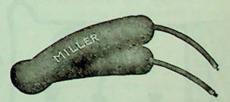
#### MILLER'S TIRE LASTS.



Constructed with convenient brackets to bolt at bottom side of bench. Taper plug joints permit last to fasten to brackets and makes solid job.

No. Sizes	Style Furnished	Weight	Price
61 3½4 in.	Tire Last, Two Brackets Tire Last, Two Brackets Tire Last, Two Brackets	25 lbs.	\$3.50 4.00 4.50

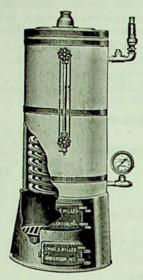
#### MILLER'S AIR BAGS.



Made of 18 oz. tire fabric of the best quality, inside tube of special non-curing rubber which will remain soft indefinitely. Heads and stems are heavily reinforced. Can furnish all sizes and styles of sectional and full circle air bags. Most popular listed below."

	Description of sectional	Dia.,	Length.	Wt.,	
No.	air bags	in.	in.	Lbs.	Price
244	Auto Tire	21/2	15	1/2	\$ 2.25
245	Auto Tire	3	15	3/4	3.00
246	Auto Tire	31/4	15	1	3.20
247	Auto Tire	31/2	15	11/8	3.35
248	Auto Tire	4	15	11/2	3.50
249 -	Auto Tire	41/2	15	13/3	3.85
250	Truck and Auto	5	15	13/4	4.20
251	Truck and Auto	51/2	15	2	4.65
252	Truck Tire 1/4 Circle	6	20	21/4	10.90
256	Truck Tire 1/4 Circle	7 -	20	23/4	12 75
257	Truck Tire 1/4 Circle	8	20	31/2	14.50
	154 P. C	2.			

#### MILLER ALL STEEL BOILERS.



Full length steel flues. Complete heating surface. High pressure.

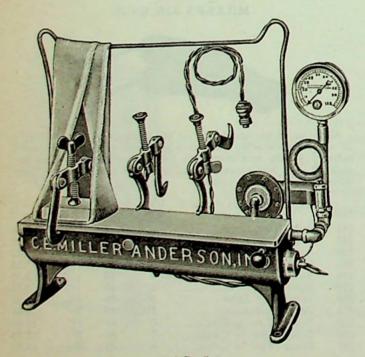
These Boilers have many uses for vulcanizing outfits, steam laundries, bakeries, cleaning, pressing and dye works, barber shops, dairymen, etc.

Have twelve 1½" seamless steel flues, expanded and cocked the same as high pressure stationary or locomotive boilers. Easy cleaning or swabbing of the flues; is accomplished by simply removing the top cover. The Nos. 85B and 85F all steel boilers measure 12" dia. x 16" high without base. Regular boilers Nos. 312, 313, 314, 315 measure 14" dia. x 4½ ft. high.

# PRICE LIST JUNIOR AND REGULAR ALL STEEL BOILERS.

Catalog No.	Style Burner & Base Approx. Ship. Wgt.				
No. 85B	Junior Gas Burner	\$43.00			
	Force Feed Gasoline				
No. 312	Regular Gas Burner Base	82.00			
	Regular Force Feed Gasoline				
No. 314	Regular Force Feed Kerosene	95.00			
	Regular Coal Burner Grates300 lbs				

All burners are furnished complete with steam gauge, pop valve, water glass, fittings, stand and necessary burners or grates for operating same.

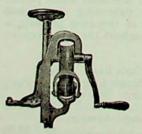


156 P. C.

### MIDGET TUBE VULCANIZERS.

# MILLER'S TREAD ROLLERS.

an extra cost). Approximate shipping weight, 50 lbs. \$23.80



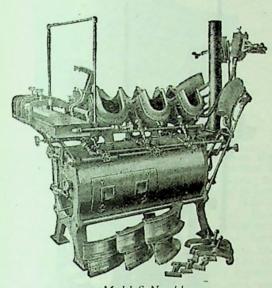
Used for rolling down of raw rubber and raw fabric either when making sectional repairs, retreading or double treading.

No. 56. Miller's Improved Tread Roller has rubber spring just under the hand wheel connected to screw which adjusts the space between rollers and permits flexibility—necessary when rolling over thick and

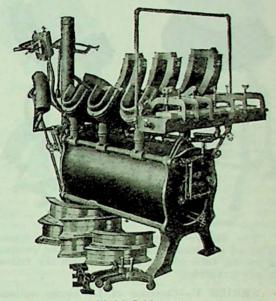
# SHALER

# SECTIONAL AND RETREADING VULCANIZERS









Model S No. 12

Instead of requiring expensive separate molds for sectional repairs and for retreading, the unique Shaler construction consists of sectional molds of the usual 1-5 circular type with the addition of steam heated extensions that can be quickly attached to convert them into 1-3 circle retreading molds in a few moments. The end of each mold and its extension are ground perfectly true and flat, then dowelled and clamped together and machined as one piece to insure a steam-tight fit at the joint and a perfectly smooth vulcanizing surface.

Accurately fitted aluminum matrices are supplied with retreading equipment so that both smooth and ribbed retreads can be made. Extensions, when desired, must be ordered with the molds—that is, the extensions fit only the particular molds with which they are machined. Note especially that the molds on all of these vulcanizers are accurately machined, not merely rough castings with the high spots buffed off.

Another feature of this entire line is the boiler used on all of the self-heating models. This boiler, designed especially for use with Shaler Vulcanizers, is drawn seamless from one piece of rolled steel boiler plate. There is not a joint, bolt rivet or weld in it. Quick steaming and absolutely safe. All boilers and molds are tested to 200 lbs. per square inch or about four times the usual working pressure.

#### MODEL S NO. 11

This model includes three 1-5 circle molds for sectional repairs in cord and fabric tires from 3 inch to 5½ inch, six sets of bead molds for SS and clincher tires, two sizes of inside and outside casing forms for repairing casings by the wrapped tread method, tread wrapping tape, machined tube-plate 8x36 inches with six clamps and blocks, all mounted on No. 3 boiler which is complete with fittings and ready to operate.

Model S No. 11, with gas burner\_\_\_\_\$500.00

# MODEL S NO. 12

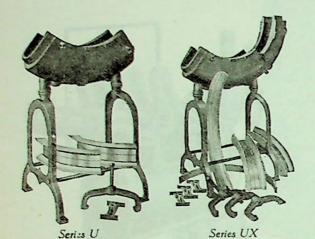
This model includes all of the equipment described with Type S No. 11 for sectional and wrapped tread repairs and for tube repairing. In addition it includes a set of three detachable retreading extensions for retreading all cord and fabric tires from 3 inch to 5½ inch. This is the most compact and economical complete vulcanizing plant ever offered to repairmen.

Model S No. 12 with gas burner\_\_\_\_\_\$690.00

(Either of the above models can be supplied with gasoline burner or kerosene burner and 8 gallon pressure tank for \$18.75 extra.)

# HALER

# UNIT SYSTEM SHOP VULCANIZERS



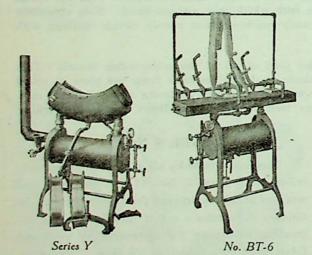
The Shaler Unit System facilitates almost unlimited combinations of sectional and retreading molds, tube plates, etc., of which the following are examples.

SERIES U-Consists of 1-5 circle sectional molds with legs, two sets of bead molds, and clamps.

No.	U-3	for	3	and	31/2	inch	tires\$85.00
No.	U-4	for	4	and	41/2	inch	tires\$95.00
No	11-5	for	5	and	51/6	inch	tires\$105.00

SERIES UX—Same as Series U, but has in addition retread extension and matrix, clamps and spring pressure bar, giving both sectional and retreading equipment for smooth and ribbed treads.

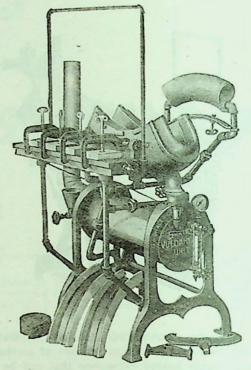
No.	UX-3	for	3	and	31/2	inch	tires\$145.00
No.	UX-4	for	4	and	41/2	inch	tires\$157.50
No	IIX-5	for	5	and	51%	inch	tires \$170.00



SERIES Y-Consists of sectional molds of Series U mounted on steam generators No. 1.

SERIES YX—Consists of Series UX combi-nation sectional and retreading molds mounted on steam generators No. 1.

3-31/2	inch	No.	Y-203	\$115	No.	YX-303	\$175.00
						YX-304	
5-51/2	inch	No.	Y-205	\$135	No.	YX-305	\$200.00



FORD SPECIAL NO. 21

This model is designed to meet the requirement of shops which have a large proportion of their casing work on small sized tires. It consists of sectional mold for 3 inch and 31/2 inch fabric and cord tires, bead molds for clincher and SS casings, form for curing inside of casings and 5x24 inch tube plate with four clamps. These units are mounted on the No. 1 boiler, which like the boiler furnished on the Type S plants is drawn seamless from heavy steel and is complete with all fittings, ready to operate. All classes of tube and casing repairs can be made with this model.

Ford Special No. 21 with gas burner\_\_\_\_\$150.00

# SERIES T-TUBE PLATES

No. T-4, 5x24 inch machined tube plate, four clamps and blocks, and tube rack (designed to be attached to existing steam line.) Same as on No.

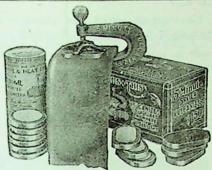
No. T-6, 8x36 inch machined tube plate, 6 clamps and blocks, tube rack, cast legs as on Series U (for attaching to existing steam line)

No. BT-6, Same as No. T-6 except equipped with No. 1 boiler as illustrated in next column, gas burner \_\_\_\_\_ \_\_\_\_\$110.00

NOTE—Above prices on Series Y, Series YX, No. BT-6 and No. 21 include gas burner. For kerosene burner or gasoline burner and 8 gallon pressure tank add \$10. SHALER

# MOTORISTS VULCANIZERS THE NATIONALLY ADVERTISED LINE

SHALER



# TYPE M NO. 5 5-MINUTE VULCANIZER

Dealers should tell every motorist how this inexpensive outfit vulcanizes tube punctures in five minutes, making permanent repairs far superior to any "stuck-on" patch. Also repairs rubber boots, water bottles, gloves, etc. Heat is furnished by a non-flaming chemical fuel. Each of the twelve Patch-&-Heat Units that come with the outfit consists of the solid fuel in a metal way to the bottom of which is attached the year. pan to the bottom of which is attached the raw rubber patch. This Unit is clamped over the puncture and the fuel lighted. In five minutes the repair is vulcanized to outlast the tube, and moulded to a feather edge that will not loosen. Only the patch is heated-no danger of overcur-Anyone can use it anywhere as quickly as sticking on a temporary patch. Each outfit includes nickel plated vulcanizer and twelve Units (6 Round and 6 Oblong) packed in a display box. Wt. 1 lb. 12 outfits in carton.

Type M. No. 5, with 12 Patch-&-Heat Units\_\$1.50

DEALERS: Ask for this window display cutout and other display cards, posters, circulars, etc. that we furnish. Simplest and only lasting Puncture 5 Minute Vulcanizer

# 5-MINUTE PATCH AND HEAT UNITS

The average user buys several packages each season as they are used not only on tires but on other rubber articles. Few accessories produce such a continuous resale. Packed 12 of a size in air tight boxes, one dozen boxes in a carton.

No. M6 Round Patch-&-Heat Units, 134 in. diameter, per box of 12\_-No. M7 Oblong Patch-&-Heat Units, 21/4 x1 % in., per box of 12 \_\_\_\_\_75c





Repairing Tube

#### TYPE G NO. 32—VUL-KIT

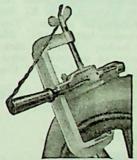
Every motorist needs this vulcanizer to repair casing cuts before dirt and water get in to rot the fabric. A 31/2x4 inch curved surface mends cuts, sandpockets, etc., in all sized casings without removing tire from wheel or letting out the air. Another machined flat surface mends all tube injuries, curing clear through and making repairs of any size. Heat is produced by a nonspillable lamp burning gasoline without dangerous exposed blaze or smoke. No watching or regulating as heat is regulated by using a measured charge of fuel. Convenient size to carry in car. Furnished complete with repair rubber, cement, clamp for casings, fuel measure, and full instructions. Polished nickel. Wt. 4½ lbs. One dozen in carton.

TYPE G No. 32 Vul-Kit \_\_\_\_\_\$3.50

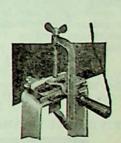
# TYPE H NO. 33—FORD-KIT

Operates on same principle as the Vul-Kit, but designed to fit 3 and 3½ inch tires. A great seller among owners of Fords and other small cars. Wt. 4½ lbs. One dozen in a carton.

TYPE H No. 33 Ford-Kit \_\_\_\_



Repairing Casing



Repairing Tube

# TYPE D NO. 83—ELECTRIC

Tube and casing surfaces are 31/2x7 inches, twice the size of any other motorist's vulcanizer. Electricity is the safest heat when temperature is regulated automatically. Simply connect to any light socket, temperature rises to vulcanizing degree and remains there as long as current is turned on. No regulating. Thermostat maintains the exact temperature so that a tire can not be overheated. Will cure through the thickest tread as well as lightest tube. When several repairs are made in succession, hot vulcanizer is moved from one to the other without cooling. One or two tubes can be mended at a time. Outfit includes tube-shelf, ten foot conducting cord and plug, thermometer, repair material, and illustrated instructions. Current consumption 70 watts. Wt. 13 lbs. When ordering state voltage of city cur-

TYPE D No. 83 for A. C. or D. C.,

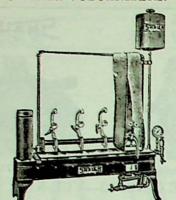
polished nickel \_\_\_\_\_\$15.00

5 Minute Vulcanizers and Heat Units, 254 P. C. Doz. lots, 307 P. C.

15

299

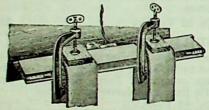
SHALER VULCANIZERS.



Steam Tube Vulcanizer.

For every kind of tube repairing, curing four tubes at one time or single repairs up to two feet long. Can be used on floor or workbench as the 43/4-inch machined tube plates stand 9 inches high. Runs for less than two cents an hour. Steam is raised in 15 minutes and held at proper pressure without regulating by automatic thermo-stat control. Equipped with steam gauge, safety valve, and four clamps and blocks same as the larger models. Gas or gasoline burner furnished. Specify which is wanted. Type L No. 40. Weight, 40 lbs......\$35.00

#### SHALER ELECTRIC TUBE PLATES.



Attaches to edge of any workbench. Heats from city lighting current. Same capacity as Type L No. 40, that is, it will handle from one to four tubes at a time. Temperature regulated automatically, cannot burn a tire. Machined vulcanizing surface 4½x24 inches. Polished nickel finish. Consumes 200 watts per hour, so no special wiring required. Equipped with 4 clamps and blocks, 2 thermometers, cord and plug. Weight, 40 lbs.

..\$30.00

#### FIVE-MINUTE SHOP VULCANIZERS.



The vulcanizer is designed to hang on the wall in any out-of-the-way place as it takes a space only 5x20 inches. It has no equal for instant tube repair service even in the shop where there is already a complete vulcanizing plant in continuous operation.

This vulcanizer practically costs the repairman nothing because with it are included 28 free patches (12 round, 12 oblong and 4 ex-long). If the repairs made with these patches bring in only 25c each, the outfit is paid for. Fifty cents is the usual charge for vulcanizing a tube.

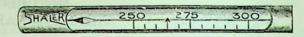
Type M No. 4. Weight, 17 lbs......\$10.00

#### PATCH AND HEAT UNITS.

Additional Units are supplied in quantity packages at a moderate price, making this vulcanizer very economical

No. G6.	Round (1¾ in.), per pkg. of 50\$3.00
	Oblong (13/8x21/4), per pkg, of 50 3.00
No. G8.	Ex-Long (1 <sup>3</sup> / <sub>4</sub> x4), per pkg. of 25 2.50

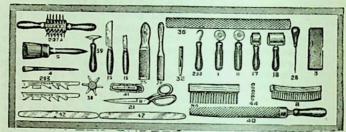
#### VULCANIZING THERMOMETERS.



U. S. Government tested and guaranteed accurate. Inferior thermometers should never be used as their inaccuracy may result in injury to the tire being vulcanized

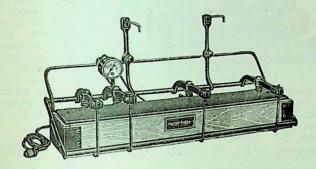
3-inch, as furnished with Types A, D, E and NPR .... \$0.75 5-inch, as furnished with Type C...... 1.00 251 P. C.

#### MILLER'S RUBBER WORKERS' TOOLS.



		200	COLUMN TO SERVICE STATE OF THE PERSON NAMED IN COLUMN TO SERVICE STATE OF THE SERV
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No.	Description of Junior Set Tools and Uses I	bs.	Price
7-A	Double Handle Porcupine Steel Roller for Removing Air Pockets	,	\$ 6.00
5	Large Oval Cement Brush for Cementing Casings	1	1,50
1	Small Cement Brush for Cementing Tubes, etc.	1/4	.20
3	Three Pair Tire Jacks for Holding Beads Open while Repairing @ 30c pair	6	.90
2	Pair Steel Tire Too's (1¼ in. wide, 12 in. long). for Tire Changing @ 85c pair.	3	.85
9	Fabric Scrapper, 2x2x2 in., Triangle, One Side Round for Scrapping		
6	Two Rubber Knives Curved Points (4x1 in.).	34	.60
5	for General Repairs @ 40c Two Single Step-off Knives to Cut One Ply	1	.80
5	Fabric in Repairing Blowouts @ 45c Hand Tube Rough Brush (4½x1½ in.). 8 in.	1/2	.90
6	Hand Casing Rough Brush (3x94 in.), Set in	1/4	.25
8	Leather, for Casing Work Hexagon Star Wrench for Adjusting Nuts on	1/2	.60
1	Valve Stems Tire Pressure Gauge for Testing Inflated Tires	1/2	.18
	Large Bent Rubber Shears for Cutting Fabric and Heavy Rubber.	1	2.50
6	Flat Hand Metal Rasp. 4 Sizes Teeth, for Gen-	21/6	1,00
2	eral Roughing	2/2	.35
9	Valves in Tubes Two Fabric Hooks for Stripping Old Fabric	-	
1	from Tires @ 50c Stitcher, % in. face, Corrugated, for Repairing	%	1,00
1	Round Edge Bead Stitcher for Bead and Side	1/2	.50
7	Wall Repairs	1/2	.60
8	pairs Wide Iron Roller, 2¼ in, face, for Casing Re-	1/2	.60
8	pairs	74	.75
3	Prevent Blows	14	.15
8-A	Sharpening Tools. Straight Handle Wire Brush, Long Wires, for	1	1.25
	Rubber Roughing	1	.65
4	Six Valve Deflator Caps for Extracting Air from Tube @ 4c	14	.24
8	Curved Handle Wire Brush, Extra Heavy Stiff Wire, for Fabric Roughing	11/2	.85
0	Half Round Hand Rasp for Rubber or Fabric Roughing	2	1,25
	Complete Junior Set.		23,00
	150 F		

# GEE-BEE Automatic Electric Steam Vulcanizers



### FIRELESS TYPE AUTOMATIC ELECTRIC STEAM VULCANIZER FOR TUBES.

Made in three sizes, to hold two tubes, four tubes or six tubes. The fireless type vulcanizer is encased and insulated like a fireless cooker. No metal part touches the vulcanizing surface of plate, so that all metal is cold at all times, reducing the consumption of current to a minimum. Fully guaranteed for one year.

#### List Prices of Fireless Type.

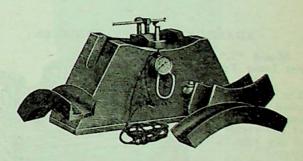
No. 2 Fireless A. C. 110 or 220 V., Size 6"x10"\$39.77 No. 4 Fireless A. C. 110 or 220 V., Size 6"x20"56.80 No. 7 Fireless A. C. 110 or 220 V., Size 6"x30"68.18	No. 2 Fireless D. C. 110 or 220 V., Size 6"x10". \$43.77 No. 4 Fireless D. C. 110 or 220 V., Size 6"x20". 60.80 No. 7 Fireless D. C. 110 or 220 V., Size 6"x30". 68.18
No. 2 is also made to connect to 32 V. lighting systems.	List

### AUTOMATIC ELECTRIC STEAM VULCANIZER FOR CASINGS.

Casing vulcanizer. Made in two sizes, number 5 for 3-3½ or 4-inch tires; number 6 for 4-4½ or 5-inch tires. Complete with two bead molds and reducing shell. Made for either A. C. or D. C. 110 or 220 V.

Encased and insulated and has a minimum of radiation, making the consumption of current as little as possible.

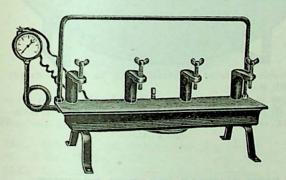
Fully guaranteed for one year.



her ...\$150.00

#### List Prices of Casing Molds.

No. 5. For 3-31/2 or 4-inch tires, complete for either	No. 6. For 4-41/2 or 5-inch tires, complete for eith
110 or 220 V., A. C. or D. C\$125.00	110 or 220 V., A. C. or D. C



### NON-FIRELESS TYPE AUTOMATIC ELECTRIC STEAM VULCANIZER FOR TUBES.

Non-fireless type vulcanizer. This is not encased and has not the improved clamping device, but has same automatic current control. Made for two tubes or four tubes.

#### List Prices of Non-Fireless Type Tube Plates.

No. 2	holds	two	tubes	for	either	110	or	220	V.,	A.	C.,	
Size	6"x10"											35.51
No. 3	holds	four	tubes	for	either	110	or	220	V.,	A.	C.,	40.75
Size	6"x20"											43.10

#### Made in Two Sizes Only.

No. 2 connected for 110 or 220 V., D. C., Size 6"x10"..\$39.51 No. 3 connected for 110 or 220 V., D. C., Size 6"x20".. 53.75

#### Construction.

Tube plates are made of steel channel iron, with ¼-inch plate of cold rolled steel Oxy-Acetylene Welded thereto, and polished.

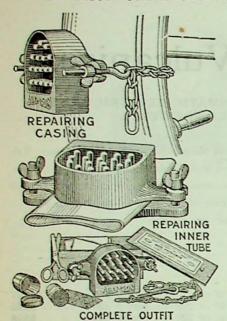
Casing molds are made of high-grade cast iron, and cavity milled out. Bead molds and reducing shells are made of

high-grade aluminum.

Fireless type tube plates are encased in wood and insulated with mineral wool. Casing molds are similarly constructed.

110 Volt A. C. shipped unless otherwise specified.

#### ADAMSON UNIVERSAL VULCANIZERS.



### Model "U." For Tubes and Casings.

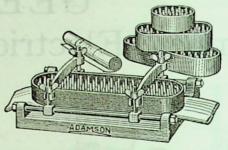
Absolutely automatic. Place the patch, attach the Vulcanizer, put in gasoline—light it. No further attention required. It can't burn, scorch, or injure tube or casings.

A practical Vulcanizing Outfit, complete, with repair gum ready for instant use.

Model "U."

Price ......\$3.00 Mailing weight, 4 lbs.

#### ADAMSON STATIONARY VULCANIZERS.



MODEL "S."
For Private Garages and Repair Shops.

With this Vulcanizer, a cut 12 inches in length is repaired in 15 to 20 minutes. The patch is prepared in the usual manner common to repair shops, and

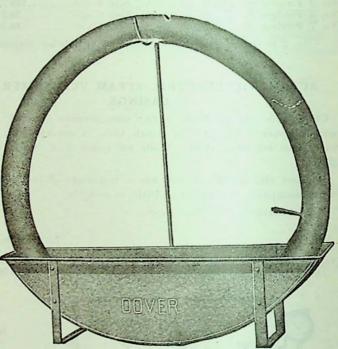
the proper size cup is clamped directly over the repair. The bottom faces of the cups are polished and slightly concave; this prevents the gum from flowing, and produces a perfect patch.

duces a perfect patch.

Model "S." Complete, with ½-pound Repair Gum.

Shipping weight, 30 pounds. Price .......\$15.00

#### TIRE TESTING TANKS.



Invaluable for locating small leaks in tubes—simply fill tank with water.

### BENT HANDLE SCRATCH BRUSHES.



No. 740.

#### ADAMSON TUBE VULCANIZERS.

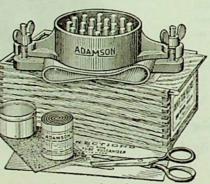
Model "T." For Inner Tubes Only.

The Vulcanizer is applied by simply clamping it centrally over the repair gum and the tube, as il lustrated.

To vulcanize the repair, one ounce or gasoline is placed into the Vulcanizer and ignited.

Model "T." Mailing

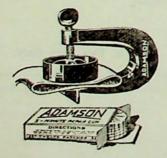
Model "T." Mailing weight, 4 pounds. Price ......\$2.00



A complete outfit with repair gum, ready for instant use.

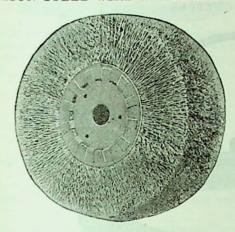
306 P. C.

#### ADAMSON FIVE-MINUTE VULCANIZERS.



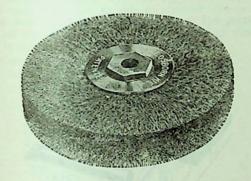
301 P. C.

#### SAMSON STEEL WIRE WHEEL BRUSHES.



No hub or holder required. Metal disc center can be punched to fit any size spindle and brush slips directly on shaft. Each section a complete brush in itself. Any desired width of face can be obtained by adding on the required number of sections. When ordering specify arbor hole. We carry in stock brushes for 1" and 1¼" hole arbors.

#### ECONOMY STEEL WIRE BRUSHES.



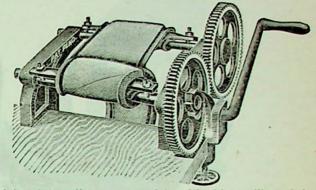
Can be run on an ordinary emery grinder. The construction is such that the wire wears down gradually, never breaking off in long lengths.

#### Sections or Fillers for Steel Brushes.

Section	Brush	Diameter	Sections	Per
No.	No.	Section	in Set	Set
364	55C	8 inches	4—3 lb.	\$3.50
358	54C	10 inches	5—4 lb.	4.50
		List Net		

Speed as follows: 8-inch, 2100 to 2400 r. p. m. Speed as follows: 10-inch, 1800 to 2100 r. p. m.

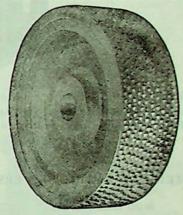
### LEADER TIRE PEELING AND FABRIC MAKING MACHINES.



Make tire peeling an easy job. Machine will peel from 50 to 60 tires in eight hours.

Price, each ......25006 \$25.00

#### METAL ROTARY RASPS.

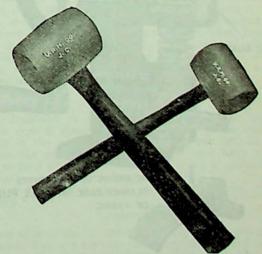


With its use the old tread can be removed in a very short time. May be operated on any emery or buffing stand. Size of spindle, not less than ¾ inch; diameter, 7¼ inches; face, 2¼ inches; weight, approximately 10 pounds. Proper speed 1800 to 2400 R. P. M.

No. 258.Metal Rotary Rasp, complete.\$14.00No. 258A.Band only for rasp.10.50No. 258B.Centers only for rasp.3.50Always mention size of arbor hole.

154 P. C.

#### RUBBER MALLETS.

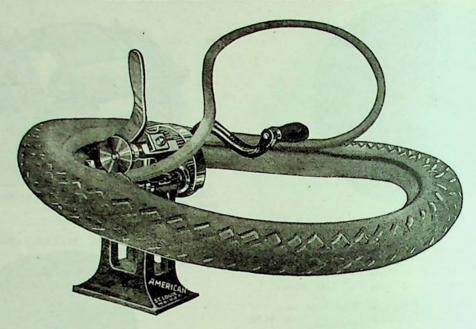


For general use about Automobiles, to prevent injury to tires, paint, woodwork, brass or other metal.

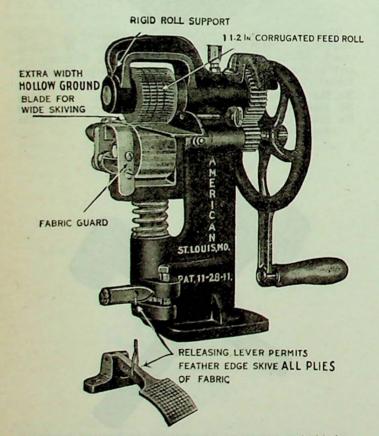
Made in two sizes.

No. 1. 2 -in. face, 3-in. long. Price, each...... 851 \$1.25 No. 2. 25%-in. face, 4-in. long. Price, each.....1204 1.60

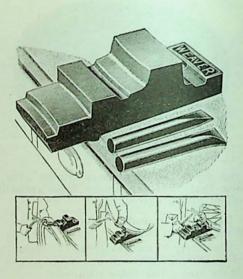
#### AMERICAN IMPROVED BEAD CUTTERS.



#### AMERICAN FABRIC SKIVERS.



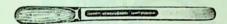
#### WEAVER RIM ANVILS.



#### CHAMPION TIRE TOOLS.



Made of ¼-inch tempered steel, 1¼ inches wide, 12 inches long. Ends are rounded and tapered, with one curved for prying under casings. Weight, 1 pound each.

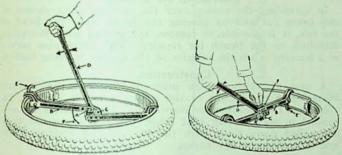


#### No. 620. Perfect Handle.

A powerful lever for quickly taking off and putting on Tires.

Thirteen and one-half inches long, I-inch, tapering to %-inch wide; 1/2-inch tapering to a curved and rounded point; 1/6-inch thick.

#### DUPLEX RIM DEVICES.

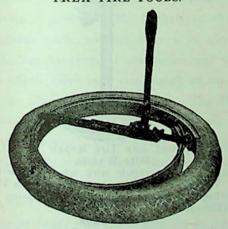


The center action of the lever, between the bars, guided by the disk, eliminates all side strain and delivers a straight pull and push. The rolling support of the disk at bottom makes it impossible for the device to sag while expanding.

Being universal in its use, the device fits any size and make of split rim, straight side or clincher, operating all in the same way. It will unlock and block any make of rim, and do all its work without injury to tire or rim. Made of drop forged steel and electro galvanized.

253 P. C. Dozen lots, 306 P. C.

#### TREX TIRE TOOLS.



Works like a jack; self-adjustable to any size tire; fits every kind of split rim; compresses the rim so that the old tire can be removed and then forces the rim into place so that it fits the next tire snugly.

LAWCO RIM TOOLS.



A Rim Tool That Works.

We are handling the St. Louis territory for Lawco Rim Tools. This tool is the quickest way to remove tires and the safest. It closes up like a knife to go in the tool box. This tool will enable anyone to remove a tire from any demountable split rim in one minute or less. Plainly it is simply a set of claws that can be hooked over a rim and can be contracted by a simple motion of a lever. It will also expand a rim, as shown in cut.

#### WEAVER ALIGNMENT INDICATORS.



Measures the alignment of the wheels while they are in motion, the only alignment affecting tire wear.

To measure the alignment of either front or rear wheels simply drive the car so that one of the wheels in question passes over the plate. The side thrust developed by misalignment causes the plate, moving on roller bearings, to move inward or outward. Thus the amount the wheels are toed—in or out—is indicated to the fraction of an inch by the movement of hands on the dial, which remain in position until again set at zero.

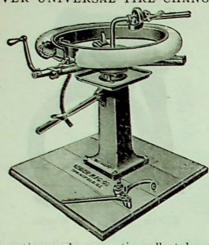
#### Two Sizes.

The Indicator is made in two sizes. The larger stationary type is designed to be installed in the entrance or runway of the garage, as shown in above cut, so all cars entering the garage will pass over it and have the alignment of their wheels tested. It will prove a splendid advertisement as well as new business getter.

The small, portable size is for use in aligning wheels in the shop.

#### Construction.

WEAVER UNIVERSAL TIRE CHANGERS.



For dismounting and remounting all styles and sizes of pneumatic automobile tires. With it the most difficult tires can be changed in a small fraction of the time required by usual methods.

No Injury to Tires.

Every operation is performed by means of smooth finished rollers and there is no occasion to injure either casing or rim, even in the most stubborn cases.

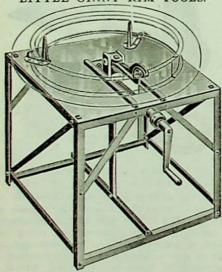
Construction.

Constructed amply strong to meet all requirements of the service for which it is intended. The various attachments shown in cut for removing tires, including goose neck, are included with this equipment.

Shipping weight, 260 lbs.

Price, each ......\$58.00

#### LITTLE GIANT RIM TOOLS.



Any mechanic can remove a tire from a split rim in one minute or less with this tool. Turning the handles does the work. No tinkering, pounding or pulling.

The forward arm is pivoted so as to swing to the right, thus coiling the rim into a smaller, perfect circle instead of merely pushing the end in. This loosens the tire evenly all around, ready to be lifted off. No other rim tool has this feature. The forward arm is also pivoted to swing straight up, out of the way when rim is being put on or taken off the table.

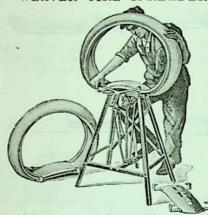
The hooks remain at a practically equal distance from each other, regardless of the size of the rim. This prevents sprung rims.

Placed anywhere in the shop. Substantially built-angle steel frame, bar steel braces. Heavy sheet steel top forms a handy place for small tools. Malleable hooks, arms, handle and bearings. Cold rolled steel spindle, 11/s inches diameter, with square threads. Height 301/4 inches; top 391/2 inches wide by 38 inches deep. Weight 120 pounds.

Price, each .....\$30.00

List Net.

#### WEAVER TIRE SPREADERS.



The only efficient means of spreading a casing so that the interior may be either inspected or repaired. This operation is necessary in repairing every puncture, blow-out or other damage which is not readily apparent when the tube is removed from the casing.

Convenient for Buffing.

In spreading the casing over the convex plate shown in this lower cut and by placing the hooks over the head of the tire, it is possible to remove the casing with the plate attached, to the bench for repairs. The plate also serves as a backing when the interior of the casing is being buffed.

Construction.

A nest of rollers, which protrude through the Buffing Plate, carry the weight of the casing when it is being re-volved on the Spreader for inspection. These rollers are suspended in such a way that when the tire is spread they are pulled down flush with the face of the Buffing Plate and do not bruise the casing.

Shipping weight, 60 lbs.

Price, each ......\$22.50

List Net.

#### WEAVER WIRE WHEEL REPAIR STANDS.



With This Equipment Any Tire Repair Man Can Repair Wire Wheels.

The proper way to repair wire wheels is with the tire removed. Therefore the tire repair shop is the logical place for wire wheels to be repaired while the casing or tube is being vulcanized.

Construction.

The standard is of heavy steel tubing, supported by a broad iron base, and carries a convenient tool tray. Three accurately machined cones are supplied; the proper combinations of which to fit the hubs of all types of wire wheels are supplied by the metal chart attached to tool tray.

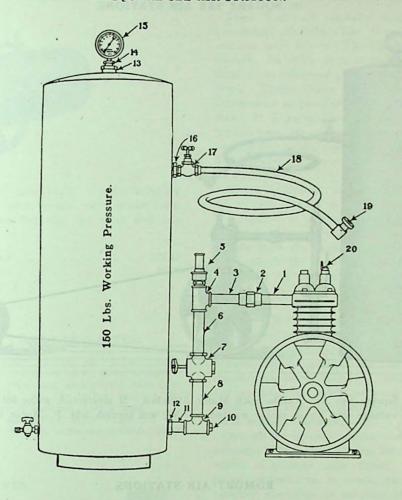
Shipping weight, 75 lbs.

Price, each .....\$30.00

16x48 inch

Air Tank

#### SQUARE SEE AIR STATION.



### Square See Air Station Complete

From our experience in equipping auto garages and others to supply air in inflating auto tires, we have found this Square C Air Station most practical. The Curtis Compressor is regularly equipped with a hand unloader, which permits the motor or gasoline engine to start the compressor and get its speed before it is required to compress air. This is quite a saving in power. It also is equipped with a very efficient discharge valve, so that there is no check valve needed in the line between the compressor and the tank. The average check valve in a compressed air line doesn't last very long. The work is too severe. The 16x48-inch Air Tank having a working pressure of 150 pounds, suits nearly all requirements. Of course the air can be piped from the tank to the curbing or to three or four places in the garage or repair shop, as may be required. Put a needle valve next to the tank, and the other valve at the end of the line or lines. We recommend the air cock to be used between the Compressor and the Tank, in place of the ordinary steam valve, which is often so used. The station regularly consists as follows:

1-Type B Curtiss Air Compressor, 3 x 31/2 in., with Tight and Loose Pulley.

1-16-in, x 48-in, Square See Air Tank, tested 300 pounds. Working pressure, 150 pounds.

1-Pop Valve. (No. 5 on cut.)

1-Pressure Gauge. (No. 15 on cut.)

1-Air Shut-off Cock. (No. 7 on cut.)

3-1 to 34-inch Reducers. (Nos. 12, 13 and 16 on cut.)

1-3/4 to 3/8-inch Reducer. (No. 14 on cut.)

2-34-inch Tees. (Nos. 4 and 9 on cut.)

5-34-inch Nipples. (Nos. 1, 3, 6, 8, 11 on cut.)

1-34-inch Plug. (No. 10 on cut.)

1-34-inch Union. (No. 2 on cut.)

1-No. 82 Needle Valve. (No. 17 on cut.)

1-Edelman Air Chuck. (No. 19 on cut.)

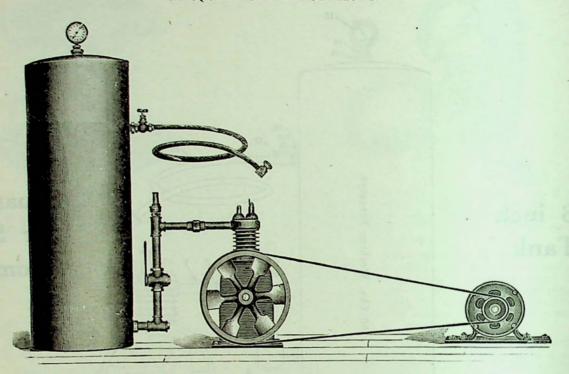
25-Feet Conqueror Air-Tight Hose. (No. 18 on cut.)

1-Hand Unloader, for starting Compressor. (No. 20 on cut.)

1-Drain Cock.

Of course, if a state or city boiler inspector requires a different arrangement, you had better follow their advice.

#### (F) SQUARE SEE AIR STATIONS.



Above cut shows our Square See Air Station with Motor Attached. If interested, write for prices, stating if current is direct or alternating, also voltage and phase motor wanted. We will furnish 1-H. P. Motor unless otherwise ordered.

#### ROMORT AIR STATIONS.

#### Romort Model S. H.

A new counterweight type Air and Water Station that is the last word in simplicity of design, stability in construction and efficiency and dependability in operation.

Radius of Air hose 17 feet.

Reach of Water hose 7 feet.

No movable joints to leak or wear out.

Automatic Governor, which acts similarly to a door check, controls return of arm to vertical position and compels a gradual return without jolt or strain on the mechanism or whip action on the hose.

Large substantial base with easily accessible opening to Air and Water connections.

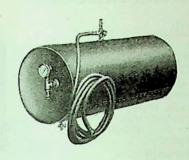
Air hose fitted with Romort Automatic Air Valve; water hose with Automatic Grip Action Water Valve.

Model S. H. Air only.....\$45.00

Model S. H. Air and Water..... 50.00



#### SERVICE CAR TANKS.



Made in two sizes—12x36" and 16x36" Tanks—including pop valve, air gauge, drain cock, needle valve outlet cock. 15 ft. of hose and chuck, and Schrader tire valve with cap and dust cap.

Size	12x36"	tank-fitted. Pr	ice\$35.	40
Size	16x36"	tank-fitted. Pr	rice 39.	00
			7 P C	



#### NEEDLE VALVES.

Either ¼-inch or ¾-inch male connection on one end to screw into pipe line, and swivel hose connection on the other end to fit either ¼-inch or ¼-inch hose.

No. 82. Price, with either 1/4 or 3/8-inch male connection. \$2.50

#### NEEDLE VALVES.

This Valve is very similar to the No. 82, but is for use in the pipe line, doing away with an ordinary globe valve.

Both ends have female connections, tapped for either 1/4-inch or 3/4-inch iron nine



No. 83. Price ......\$2.25



#### SAFETY VALVES.

This is an Adjustable Safety Valve, having a ball seat, and is air-tight. Always set for 150 pounds when shipped, unless otherwise specified.

With either 1/4-inch, 3/8-inch or 1/2-inch male connection:

No. 72. Price ......\$3.00

#### VERTICAL CHECK VALVES.

This Check Valve is made especially for air lines, and should always be used in a vertical position.



#### SOUARE SEE AIR TANKS.

These Tanks are specially made for air pressure, and are guaranteed air-tight. The seams are welded and brazed, and are extra heavy. The long seam down the side is also riveted. An extra piece of metal is brazed on the inside of these tanks wherever a large hole is to be drilled for connections. These Tanks should be installed as near the Compressor as possible, for best results. We do not recommend, in a garage, air pressure above 175 pounds. The largest tires are recommended to carry only 110 pounds (only a few used), and we are sure that our customers will find working air pressure of 150 pounds quite high enough for their use.

Where additional air is wanted, we suggest buying a larger tank. This is safer than increasing the pressure. We suggest, in connecting the Compressor to the Tank, the air be piped to the lowest practical point, and in drawing air from the tank, a connection be made a good distance above the receiving point. A shut-off valve should be placed on the line between the Compressor and the Tank, and as near the tank as practical. There should be a needle valve in the outlet line as close to the tank as possible. With the use of these valves, the air can be shut off in the tank.

It is our suggestion that the safety valve be placed between the compressor and the shut-off valve, as there is considerable more danger of starting the Compressor without opening the valve between the Compressor and the Tank, than there is that the expansion in the tank will cause excessive pressure.

One of the greatest causes for complaint is the loss of pressure. There are several causes, the most common of which is careless pipe fitting. Whenever an air compressor installation is made, the pipe threads should be carefully examined to see that they are perfectly cut. In making joints, Shellac, Asphaltum, or a mixture of Litharge and Glycerine should be used to fill up any little openings between the threads. If the joints are all properly made in this manner, there should be no leakage at these joints.

	Working Pressure.	Tested.	Price.
16x48-inch	150	300	\$27.50
16x60-inch	150	300	30.00
18x72-inch	150	300	40.00
*F. O.	B. Factory.		
16" diameter	156 and 52	PC	

# 18" diameter 251 and 58 P. C. CURTIS STEEL AIR TANKS AND FITTINGS.

The prices below do not include the Compressor, but the tank and its extras.

Specifications—Welded steel pressure tank, or size specified, complete with pop safety valve, air gauge and drain cock

Extras—Piping between Compressor and tank: Inlet cock, one extra elbow, one sleeve, and one each 12-each and 24-inch nipple for some slight variation in location of tank. See table.

Information Wanted-Size and pressure of tank-extras desired.

			Tank	s Witho	utPiping	: Extr	as:
Size	Cap.	Usual Size of	Size	For 1	50 lbs. Press, ydro 20 lbs.)	Piping	
Tank.	Gals.	Comp.	Pipe.	Weight	List	Price.	Price.
14x48	32.1	21/2x3	3/4	77	\$27.00	\$5.40	\$3.15
16x60	52.5	3 x3½	3/4	117	39.60	5.40	3.15
20x60	82.5	41/2×41/2	11/4	176	57.60	7.20	5.40
			202 P	0			

CURTIS AIR STATION.

## CURTIS MODEL B SINGLE STAGE COMPRESSORS

#### "CURTIS AIR-FREE FROM OIL"

Popular sizes listed in bold face type

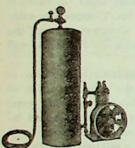
PURE AIR for your customer means good service, because oil ruins tires, and AIR FREE FROM OIL means fewer blowouts-fewer punctures-greater tire mileage-less repairs; saves them many dollars up-keep every month.

#### A Few Curtis Exclusive Features

Controlled Splash Oiling System, high and low level oil filling gauge, fan fly wheel, safety cage under valve, hand unloader, adjustable removable bearings, head removable without breaking pipe connections.

\*The No. 4 is the most popular size for garage service, and the No. 2, the next st popular. See data below.

most popular. Dec data belon.					
Size	1	*2	3	*4	5
Bore and Stroke	15%x2	21/8x21/2	21/2x3		41/2x41/2
Minimum Speed	500	400	350	300	250
Cu. Ft. Displacement	1.2		2.99	4.32	
H. P. at 100 lbs	.24	.36	.60	.87	
H. P. at 200 lbs			.78	1.14	2,75
Usual Size Motor, H. P.	700	1/2	3/4	1	3
Maximum Speed	700	600	550	500	
Cu. Ft. Displacement			4.7		
H. P. at 100 lbs	.34	.54	.95	1.45	
Size Pulley	9x134	11x21/8	12x21/s	14x2 %	18x41/8
Shipping Weight	55		100	150	
With Tight Pulley only	\$34.20	\$37.80	\$47.70	\$50.40	\$108.00
With Tight and Loose Pulley		41.40	51.30	54.00	126.00



#### STYLE "S" SINGLE STAGE OUT-FITS AND SEPARATE TANKS

Style "S" outfits include compressor, tank, piping compressor to tank, air gauge, pop safety valve, drain cock, outlet cock, 20' of hose and air chuck, all as illustrated.

Tanks only include pop safety valve, air gauge and drain cock.

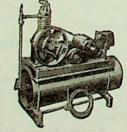
PRICE	44011	OUTFIT	PA	AROVE
PRICE	5	OUILII	AS	ABOVE

PRICE '	TANKS	ONLY
---------	-------	------

Style and No.	Size of Com- pressor	of	of	in	plete Outfit	EX- TRAS	Wt. Lbs.	Size	We Air	Pres.	Piping between Comp. and Tank Price
S-2 S-3 +S-4	1 1 x2 2 1 x2 1/2 2 1/2 x3 3 x3 1/4 4 1/4 x4 1/2	1/2	12x36 14x48 16x60	17.2 32.1 52.5	\$82.80 90.50 109.20 135.50 236.00	3.60 3.60 3.60	140 190	12x36 14x48 16x60 20x60	77 117	\$23.40 27.00 39.60 57.60	5.40 5.40

#### STYLE "V" SINGLE STAGE OUTFIT

Outfit includes compressor, motor and tank of sizes listed, single leather drive belt or cut fly wheel gear and raw hide pinion as desired. Piping between com-pressor and tank, all mounted on hard-wood skids; also 15 feet of hose with tire chuck as illustrated.



#### PRICE BELTED OR GEARED

				No Mo		Con	plete wi	th Motor		Extra for Auto'tic.
Style and No.	Size Com- pressor	Motor,H	Size Tank In.	no Star no Pini nor Be Price	on,	D. C. 110-220	Sg. Ph.	A. C. 50 Cyc. 20r3 Ph. 110-220	Ap.	Starting and Stopping
	21/4x21/2 21/2x3	一场光彩	12x36 14x48 14x48	\$109.00 116.40 133.60	260 270	247.00	235.20 284.20	238.90 277.00	375 425	40.00 75.00
V-4 V-5	3 x31/2	1 3	14x48 14x48	142.20 263.50	450 785					

\*Popular size garage outfits. All prices subject to discount. Tanks listed not suitable in Detroit, Chicago or Canada. For 150 lb. pressure California tanks, advance "S" outfit lists 15%; motor driven outfit lists 5%. Chicago or Detroit tanks on application. For 25 or 40 cycle motors, increase "Z", "X" and "V" Outfit lists 15%; "W" outfits 20%.

#### STYLE "Z" SINGLE STAGE OUTFIT

Price includes compressor, tank and motor of size specified, piping between compressor and tank, including suut-off cock, air gauge, pop safety valve and drain single leather drive belt, mounted cock, on oak base, as illustrated.

#### PRICE BELTED ONLY

Style and No.	Size Com- pressor	Motor, H.P.	Size Tank In.	No Mot Belt, nor Mo Pulle: Price	tor	D. C. 110-220	Sg. Ph.	A. C. 60 Cyc. 20r3 Ph. 110-220	Ap.	Extra for Auto'tic. Starting and Stopping Device
*Z-2a Z-3a *Z-4a Z-4b Z-5	2 1/8 x 2 1/2 2 1/2 x 3 3 3 3 1/2	1/2/2/21 1 3 3	12x36 12x36 14x48 14x48 16x60 16x60 20x00	\$ 77.40 86.40 99.00 102.60 115.20 194.60 215.30	185 280 305 485 645	194.40 216.00 252.00 264.60 505.40	271.80 282.69 295.20 507.60	210.00 239.20 251.50 264.25 401.60	865 410 500 780	75.00 75.00 75.00 75.00 90.00

#### STYLE "X" SINGLE STAGE OUTFIT

Outfit includes compressor, motor and tank of sizes listed, single leather drive belt or cut fly wheel gear and raw hide pinion as desired. Piping between compressor and tank, 15 feet of hose with tire chuck and outlet cock. Twenty feet of cord with plug and switch. Outfit mounted on wheels.

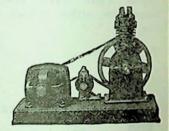


#### PRICE BELTED OR GEARED

		.P.		No Mo		Com	plete wi	th Motor		Auto tie
Style	Size	r,H.	Size	Belt, Pir	tor	D.C.	A. C.	A. C. 60 Cyc.	Ap.	Starting
No.	Com- pressor		Tank In.	Pulle		110-220	Sg. Ph.	2or3 Ph.	Sh.	Stopping
_		M		Price	Wt.		110-220	110-220		Device
	15/8x2	1/4	12x36	3113.80					320	\$40.00
	21/8x21/2 21/5x3	3/	14x48 14x48	131.40	260 270		250.20 304.20		440	75.00
X-4	3 x31/2	i	14x48	147.60	450	306.00				
X-5	41/2×41/2	1	14x48	264.60	785	574.00	552.00	411.50	300	30.00

#### STYLE "W" SINGLE STAGE OUTFIT

Outfit includes compressor and motor of size listed, single leather drive belt or cut fly wheel gear and raw hide pinion as desired; all mounted on cast iron base as illustrated opposite; no tank.



#### PRICE BELTED OR GEARED

	H.P.				tor,	Con		Extra for Auto'tic.		
Style	Size	or,H	Maxi-	Belt, Pin	tor	D.C.	A. C.	A. C. 60 Cyc.		Starting
and No.	Com- pressor	oto	mum Pressu'e			110-220	Sg. Ph.	2or3 Ph.	Sh. Wt.	Stopping
		N		Price	Wt.	1	110-220	110-220		
	15/x2		150 lbs.				\$149.40			
	2 1/8 x 2 1/2 2 1/2 x 3		150 lbs. 150 lbs.							75.00
★W-4		1	150 lbs. 150 lbs.	86.49	235	244.80	275.40		350 675	

#### STYLE "Y" OUTFIT (For Private Garages.)

Y-1-A Portable Outfit, as illustrated, with 1/4 H. P. 60 cyc. sing. ph. or D. C. Motor, 20 feet of cord, 15 feet of hose, price.....\$130.00

Y-1-B Stationary Outfit, same as above, but no wheels, push bar nor electric cord, price......\$125.00

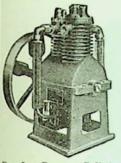


#### CURTIS COMPRESSORS.

### CURTIS TWO-STAGE AIR COMPRESSORS

"AN ORIGINAL DESIGN"

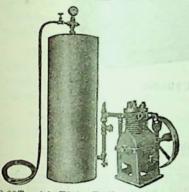
#### "CURTIS AIR-FREE FROM OIL"



CURTIS Two-Stage Compressors embody all the exclusive features that established our single-stage so firmly on the market, and in addition, have all possible advantages of two-stage compression. The intercooler is made of Copper tubing with thin copper radiating fins rigidly attached. Copper conducts heat 135% better than cast iron. This assures the fullest advantage of two-stage compression.

ı	Bore Low Pressure Cylinder 3 incl Stroke Low Pressure Piston 3 incl	hes
ı	Stroke Low Pressure Piston 3 incl	hes
ı	Bore High Pressure Cylinder	hes
ı	Stroke High Pressure Piston 21/2 incl	hes
ı	Displacement at 210 R. P. M. (Minn.)	ft.
	Displacement at 280 R. P. M. (Std.)	ft.
	Displacement at 410 R. P. M	ft-
۱	Displacement at 550 R. P. M	ft.
l	Electric Motor H. P. recommended at 210 R. P. M	P.
I	Electric Motor H. P. recommended at 280 R. P. M 1 H.	
۱	Electric Motor H. P. recommended at 410 R. P. M	P.
ı	Electric Motor H. P. recommended at 550 R. P. M. 2 H.	P
ı	Pulley Size	
ı	Shipping Weight	ha
ı	Price No. 20-T, Tight Pulley Only. \$102.	00
۱	Price No. 20-L, Tight and Loose Pulleys. 107.	
ı	Total and Anglio and Adobe Luneyo.	

#### STYLE "S" TWO STAGE OUTFIT



No. 20 CURTIS Two-Stage Compressor, with tight or tight and loose pulleys, asordered.

16"x60" (52 gallon) steel air tank, 200 lbs. working pressure.

Piping between compressor and tank, two needle valves for inlet and outlet cocks, pop safety valve, pressure gauge, drain cock, 20' of special air hose with tire chuck. No motor.

Prices

S-20T,	with	Tight	Pulle	y only	·		 	 			 	\$160.00
S-20L,	with	Tight	and I	oose	Pulle	ys.	 	 			 	165.00



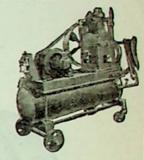
#### STYLE "V" TWO STAGE OUTFIT

No. 20T CURTIS Two-Stage Compressor, 14"x48" or 16x60 steel air tank, 200 lbs. working pressure, motor, belt tightener, single leather drive belt, pop safety valve, pressure gauge, drain cock, all necessary piping from compressor to tank, 20' of special air hose and tire chuck.

Style and No.	Motor H. P.	Com. Speed	C. Ft. Dis- place- ment	Size Tank See Spec. Below	D. C. 110- 220	A. C. S. Ph. 60 Cy. 110- 220	A. C. 20r3 Ph. 60 Cy. 110- 220	Wt.	Extra Auto Starting and Stopping Device
V-20 V-20a V-40 V-40a V-60 V-80	3/4 3/4 1 1 1 1/2 2	210 210 280 280 410 550	2.6 2.6 3.4 3.4 5.0 6.6	14x48 16x60 14x48 16x60 16x60 16x60	\$310.00 360.00 330.00 380.00 398.00 448.00	370.00 340.00	310.00 360.00 383.00	565 625 675	\$40.00 40.00 75.00 75.00 75.00 75.00

#### STYLE "X" TWO-STAGE OUTFIT

No. 20-T CURTIS Two-Stage Compressor, 14"x48" (32 gallon) steel air tank, 200 lbs. working pressure, motor, mounted on large rear wheels and front universal casters, push bar handle, cord and hose rack, 20' of waterproof electric cord and plug, 15' of hose and tire chuck.



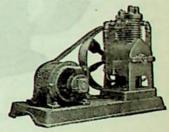
#### PRICE RELIED ONLY

Style and No.	Motor H. P.	Com. Speed	Cu. Ft. Dis place- ment	D. C. 110-220	60 Cy.	A. C. 2 or 3 Ph. 60 Cy. 110-220	Wt.	Extra Auto Starting and Stopping Device
X-20	134	210	2.6	\$360.00	\$370.00	\$350.00	590	\$40.00
X-40		280	3.4	380.00	390.00	360.00	610	75.00

#### STYLE "W" TWO-STAGE OUTFIT

No. 20T CURTIS Two-Stage Compressor, Motor, with belt tightener, single leather drive belt, mounted on cast iron base.

This Outfit does not include tank nor piping from compressor to tank, no hose nor electric cord.



#### PRICE BELTED ONLY

Style and No.		Com. Speed	Cu. Ft. Dis place- ment	D. C. 110-220	60 Cy.	A. C. 2 or 3 Ph. 60 Cy. 110-220	Wt.	Extra Auto Starting and Stopping Device
W-20	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	210	2.6	\$270.00	\$280.00	\$265.00	330	\$40.00
W-40		280	3.4	290.00	300.00	270.00	350	75.00
W-60		410	5.0	315.00	375.00	300.00	425	75.00
W-80		550	6.6	365.00	400.00	330.00	450	75.00

#### CURTIS (STYLE "V") TRUCK TIRE OUTFIT Single Stage Water Cooled

Fully meets needs of service stations serving large truck tires;

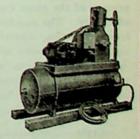
designed for 200 lb. pressure service; large compressor and tank capacity, water cooled for SAFETY and EFFICIENCY.

4½ Model "A" water cooled compressor, 20"x60" (82 gallon) steel air tank, 200 lb. working pressure, 3 H. P. motor, belt tightener, belt and 20' of special air hose with tire chuck

#### Prices

For A. C., 60 Cy., Sin. Ph., 110
or 220 Volts\$658.40
For A. C., 60 Cy., 2 or 3 Ph.,
110 or 220 Volts 536.00
For 110 or 220 Volt, D. C 618.80
Automatic Starting and Stop-
ping Device, including Cent-
rifugal Unloader 90.00

Note—Can be furnished in Style "S" Outfit, if wanted.

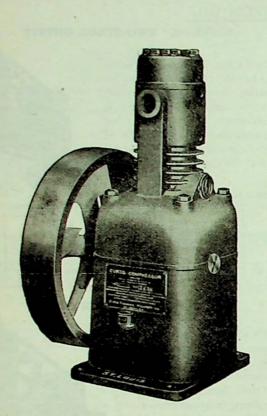


Note-No extra charge for California tanks on two-stage and truck tire outfits, but are approved in California for 150 lbs. pressure, instead of 200 lbs.

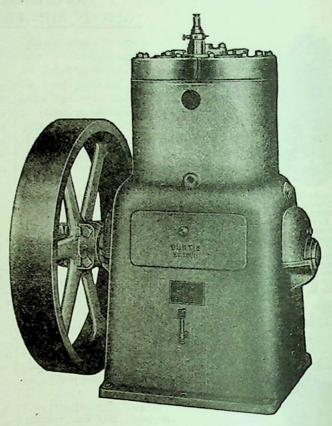
Tanks listed not suitable in Detroit, Chicago or Canada.

For 25 or 40 cycle alternating current motors, increase above lists 15%. Automatic device cuts in at 140 lbs. and out at 175 lbs. except in California where same cuts in at 120 lbs. and out at 150 lbs.

#### CURTIS WATER COOLED (MODEL A) AIR COMPRESSORS.







Double Cylinder.

Fully Enclosed. Dust and Dirt-Proof.
Full Self-Oiling. Controlled Splash Regulatable Sight Feed Cylinder Lubrication.

Curtis Compressors bear an enviable reputation for high efficiency, and stand in the foremost rank of high grade machines. They are well designed, strongly built, wearing parts are of generous proportions, the material the best obtainable, and the workmanship of the highest order. They are automatically lubricated by a controlled-splash system, with regulatable sight feed for cylinder oiling, can be furnished with automatic unloader, and have every refinement that makes for efficiency and economy of power and maintenance.

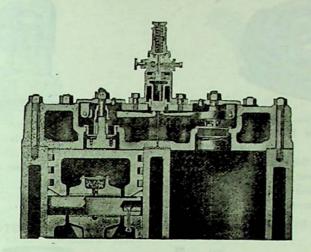
Machines are made entirely in their own plant, manufactured direct from the raw product. They have their own grey iron, steel and brass foundries, and do not have to depend upon other manufacturers for their parts. They can afford to give honest material, and do not have to cut down sizes in order to meet competition. For the same amount of money invested, therefore, we offer you greater compressor value. The Curtis Compressor has been adopted as standard by some of the largest manufacturers in the country who furnish compressors in connection with their own product.

Design.—The design of the Curtis compressor is the result of, and has been proven by, over twenty-five years of experience, featuring simplicity, durability, economy and efficiency. It has 80 per cent more cooling surface than any double-acting compressor of the same capacity. The heads and valves being water-cooled, as well as the cylinder walls, increase the volumetric efficiency. The machines are self-contained, considerably heavier than other compressors of similar capacity, assuring freedom from vibration, admitting of light foundations and withstanding the excessive strains due to speed and high pressure. The automatic unloader makes the Curtis compressor especially economical and desirable for intermittent service. The controlled-splash oiling system, with its regulatable sight feed of the oil fed to the cylinder, its consequent saving of oil and attention, is another feature found only in the Curtis compressor. The discharge of the water circulation is taken from the heads, or in other words, at the highest point of circulation, so that there is never any possibility of the hot water becoming pocketed or trapped in the heads, and there is no possibility of water circulating without passing through the heads.

Style.—Conditions dictate the style to be used. If air is wanted at infrequent intervals, or for only a few hours a day, then we suggest the tight and loose pulley machine, if driven from a line shaft. Short belt center electric drives are used only where limited room makes it necessary, and such drive is recommended rather than the silent chain or geared types.

Cooling.—Single cylinder compressors are made either air or water-cooled. Double cylinder compressors are made water-cooled only. The thorough water jacketing of the cylinders and the heads and the discharge of the water at the highest point in the circulation, insures maximum cooling and, therefore, maximum efficiency.

CURTIS WATER COOLED (MODEL A) AIR COMPRESSORS-Continued.



Impossible for Water in Water Jackets to Pocket Itself in the Heads.

Capacity.—Large valve port areas, light valves, small clearances, large water cooling area, surrounding cylinders, heads and valves, large and generous bearings, comparatively few working parts, and the controlled splash regulatable sight feed lubrication system, insures large capacity and permits of reasonably high speeds. Curtis compressors, by actual test, at tabulated speeds, show an efficiency of 95 per cent and greater of the theoretical piston displacement. Compressors in operation in our own plant at excessive speeds, high pressures, and constant service over period of several months, prove our claims for efficient cooling, perfect lubrication, proper valve design, proper valve construction, and that reasonably high speeds are permissible.

Speeds.—The general design of our compressor, and especially the valve construction, permit of our machines being operated at a speed at least as great, or, in fact, 10 or 15 per cent greater, than any other type of air compressor, but in order to reduce the wear and the heat generated, to increase the economy and efficiency of the machine, and to insure long life, we recommend the more conservative speeds, as rated in our fables.

Frame is of the box type, sufficiently heavy to absorb the vibration. The base has wide flanges bearing on foundation throughout their entire length.

Cylinders.—Cylinders are single-acting (no stuffing boxes) and are made of hard, close-grained iron, suitable for long and continuous wear, accurately bored and finished by reaming, to insure absolute roundness and exact diameter and to reduce the wear. The thickness of the walls will permit reboring, if necessary after long period of operation, and after rebored, are still suitable for the pressure for which the compressor is designed.

Pistons are hollow, cast in one piece, and of the long trunk type. They are accurately finished, and each provided with three special metal packing rings, carefully fitted, and forming a perfect sliding joint with uniform pressure on their entire circumference. The rings, after being turned, are cut and then sprung together and finished to the exact diameter of the cylinder. The wrist pin is ground to gauge and case hardened. In the 6x6 single and all double cylinder sizes, where the pin is tight in the piston, the connecting rod is fitted with a removable phosphor-bronze piston pin bushing.

Power required for any given capacity is less with Curtis compressors than competing machines. This has been proven by unbiased tests taken under actual service conditions, and the horse-power mentioned in the table below is the actual energy used during those tests. It is only natural that Curtis compressors require a minimum of power, since they have no cross-heads, guides or stuffing boxes to produce friction, and, since the cylinders, heads and valves are water-cooled and the clearances are reduced to a minimum, it permits the air taken into the cylinders to remain as cool as possible, and therefore give maximum capacity with less power.

Table of Curtis Model "A" Compressors.

Compre Bore					acity	Wassy Da	Hors: Power at Standard and Maximum Speeds:						
and	Single	R. P	. M.	Cubic Free	Air:	Horserd					Shipping Weight:		
Stroke (In.)	Double Cyl.	Std.	Max.	Std. Speed	Max. Speed	80 lb. Pressure	100 lb. Pressure	125 lb. Pressure	150 lb. Pres.	200 lb. Pres.	Do- mestic		
4½x 4½	Single	200	400	8.3	16.6	1.58- 3.16	1.67- 3.36	1.86 3.72	2.00	2.20	385		
6 x 6 6 x 6	Single Double	175 175	300 300	17.2 34.4	29.5 59.0	3.28— 5.50 6.55—11.2	3.45— 5.90 6.92—11.9	3.85	4.15 8.3	4.50 9.1 —	730 1100		
7 x 7 8 x 8	Double	160	250	49.9	78.0	9.5 —14.9 14.2 —19.9	15.0 - 15.7 $15.0 - 21.0$	11.2	12. — 18. —	13.1	1700 2100		
9 x 9	Double Double	160 160	225 210	74.4 106.0	104.5 139.	20.2 26.5	21.3 - 28.3	23.8	10.		3200		
10 x10 12 x12	Double	160	200	145.5	182. 298	27.7 —34.6 45. —57.	29.3 —36.6 47.4 —60.	32.6 — 52.8 —			4000 6200		

Write us for Prices.

#### CONQUEROR AIR HOSE.



The tube and cover are made from the highest grade of materials known and the plies of fabric are practically inseparable.

In a word, the hose is of such high grade that it will withstand not only exposure and hard service, but will show excellent lasting qualities even when abused.

It is guaranteed to stand 700 pounds pressure.

is-inch.	Price,	per	foot231	\$0.28
¼-inch.	Price,	per	foot276	.30
%-inch.	Price,	per	foot309	.35
1/2-inch.	Price.	per	foot353	.45

In 25 and 50-foot lengths. We do not cut.

#### AIR PRESSURE HOSE.



Acme Moulded 3-Ply Plain.

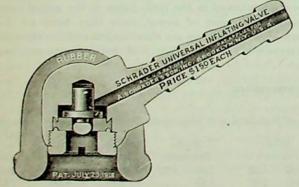
#### RATTLESNAKE TUBING.



This Tubing will stand a working pressure of 400 pounds to the square inch. It is a jacketed, molded tubing, light and flexible. For air lines, gas connections, and pump.

13g	inside 44	\$0.10	75 76	inside	68	\$0.14
1/4	inside 11/26	.12	3/8	inside	76	0.16

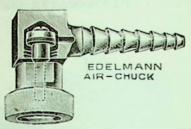
#### SCHRADER UNIVERSAL INFLATING VALVES.



Works automatically and gives instant service, and will not injure valve insides.

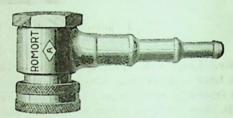
						rice,	each.
No.	2866.	1/2-inch	shank	for	1/2-inch	hose891/21	\$1.25
No.	2867.	76-inch	shank	for	3/s-inch	hose891/26	1.25
No.	2868.	3/8-inch	shank	for	fe-inch	hose891/23	1.25
No.	2869.	is-inch	shank	for	1/4-inch	hose891/28	1.25

#### EDELMANN AIR CHUCKS.



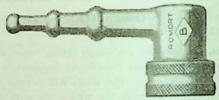
For use in connection with air storage tanks. To operate, press over tire valve; when tire is inflated, remove air chuck, and the air is shut off automatically. Long taper shank to fit Gauge hose of all sizes:

#### ROMORT AUTOMATIC AIR VALVES.



Model A.

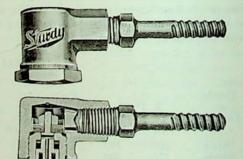
For use of free air stations. Stands hard, rough usage. Solid bronze casting. Air is released only when the valve is pressed onto tire. Made to fit any size air tubing. Weight, 9 ounces.



Model B.

For small and inexpensive automatic air device. Solid bronze one-pièce casting. Universal stem will fit any size air tubing. Weight, 5 ounces.

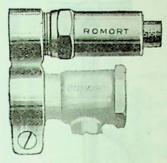
#### STURDY AIR CHUCKS.



Triple sealed at three points automatically, eliminating expensive leakage and loss of pressure. Simply place over the tire valve and press together.

Specify 1/4", 3/8" or 1/2" stem, hose size. When no size is given, 1/4" will be supplied. Price, each............2502 \$3.00

#### ROMORT TIRE TESTER ATTACHMENTS.



The Tire Tester Attachment is made for the purpose of attaching the Schrader Tire Tester permanently to the Romort Automatic Air Valves, Model "A" or "B." There are only two parts, the barrel and cap. The barrel is a brass casting made to hold the standard Schrader Tire Tester. A double cap screws on to the Automatic Valve instead of the regular cap, and is held in place by a compressor screw. Insert your Schrader Tire Tester into barrel, then screw barrel into cap. The price includes the holder attachment only.

#### UNION PIPE AND HOSE CONNECTIONS.



Whenever it is desirable to attach a hose to an iron pipe, the Union Iron Pipe and Hose Connection can be used. Made of bronze, rust-proof and substantially constructed, will fit a \%-inch pipe and \%4, \% or \%2-inch hose. Standard package of 60 weighs 19 lbs.

#### PIPE AND HOSE CONNECTIONS.



Solid bronze casting, nickel plated. Stem will fit any size hose ¼-inch to ½-inch and threaded to fit ¼-inch iron pipe Standard package of 100 weighs 23 lbs.

#### PUMP CONNECTION RUBBER WASHERS.



Pump Connection Rubber, made of special compound rubber. For Romort and No. 47 Air Chucks.

#### SUITABLE FOR FOOT PUMPS.



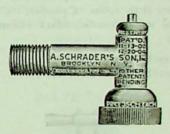


Vo. 45.

No. 51

Machined from brass rod; has a fibre washer, which makes
a tight joint. %-inch shank; weight, I ounce.
No. 45. Price, each83 \$0.15
No. 51 same size as No. 45, but has a plunger push pin.
No. 51. Price, each
Pump Connections with Hose, each

#### SCHRADER UNIVERSAL PUMP CONNECTIONS.



No. 2815.

Screws on to end of rubber tubing of pump and connects with tire valves by means of a swivel nut. Deflating pin at top permits of the pressure in the tire being taken while the pump is still attached to the tire and in operation.

#### PUMP CONNECTIONS.



Acorn No. 2.

#### AUTO PUMP LEATHER ASSORTMENTS.

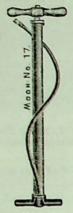
An ideal assortment for the repairmen and dealers.

Consists of seventy-two cup leathers, of the following:
Six ¾-inch; eighteen ¾-inch; twelve 1-inch; six 1½-inch;
twenty-four 1¼-inch; six 1½-inch.

#### CUPPED AUTO PUMP LEATHERS.

%-inch.	Per	100	502	\$0.80
%-inch.	Per	100	506	.80
3/s-inch.	Per	100	528	.80
1 -inch.		100		1.00
11/s-inch.		100		1.20
134-inch.	-	100	1000000	1.40
13/s-inch.	100,000	100	5000	1.80
1 %-inch.		100	10000	2.40
1%-inch.		100		6.00
174-men.	D			6.00

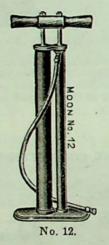
#### MOON TIRE PUMPS.



No. 17.

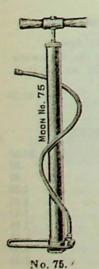
No. 17. Pump meets every requirement. Light, compact, and takes up very little room. Cylinder, 11/4"; height, 201/4"; h" rod; natural wood handle; black enamel finish. Wt. 1 lb., 12 oz.

No. 17.	Price, ea	ach	\$1.25
No. 17.	Price, ea	ach, in lots 50 or more	1.25



Double Cylinder Pump. Packing is self-adjusting. Leak-proof and lasts indefinitely. Cylinder, %" and 11/2"; height, 181/4"; fe" steel rods; black enamel finish; stamped steel base; natural wood handle. Wt., 2 lbs., 4 oz.

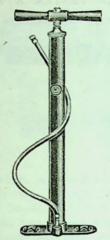
No. 12.	Price, each	1142	\$2.25
No. 12.	Price, each.	in lots of 50	2.25



Strong, compact and of great capacity, as well as handsome in appearance. Specifications: Cylinder, 11/2"; height, 23"; 3/8" rod; folding base; natural wood handle; black enamel finish. Wt., 2 lbs.

No. 75. Price, each .......983 \$2.00 No. 75. Price, in lots of 50..876 2.00

#### MOON TIRE PUMPS.



No. 58.

Equipped with patented piston valve which will operate with the slightest up or down movement of the handle. Red enamel finish; height, 231/2"; cylinder, 11/2"; flat malleable base; removable brass check valve; io" steel rod; black enameled hardwood handle; polished brass trimmings. Wt., 2 lbs., 10 oz.

No. 58	. Price,	each				 	 	 2183	\$3.25
No. 58	. Price,	each,	in lots	of	50.	 	 	 1946	3.25

#### ROSE TIRE PUMPS.



Rose Pump.

The flapping type valve. As handle is drawn up the small flapper vibrates in rapid succession, permitting air to pass to lower part of the cylinder. When handle is started on the downward stroke the vibration of flapping valve ceases and compression takes place. Steel construction; finished in baked enamel; hose 24" long.

11/4" diameter. 22" long. One in carton; 6 cartons to case. Wt. per case, 20 

11/2" diameter, 22" long; packed one in carton, 6 cartons to case. Wt. per case, 24 lbs. Price, each....2007 3.00

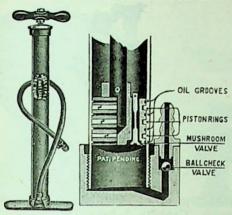
#### SUNDERLAND PUMPS.

Pump handle has never been known to work loose. The piston fits the barrel to 4-1000 of an inch. The unique leather piston ring, with the air space behind it, opens to the lower side of the piston, produces an almost completely air-tight piston.

No. 1.	Price, each2856	\$3.50
No. 1.	In lots of 12, each 2500	3.50



#### CAN'T-LEAK TIRE PUMPS.



Strong, powerful, durable. No leather cup to dry or burn out. Nothing to get out of order. Cast iron piston with light mushroom valve to by-pass air and three step-cut rings which expand, thereby preventing leakage. Barrel of high carbon seamless steel tubing, with bright inside finish. Base malleable.

Size	11/4 x 20.	Price,	ach		\$5.00
Size	11/2×18.	Price,	ach		5.00
	253 P. C.	In lots	of 6 306 P. C.	Doz. lots	331 P. C.

#### YANKEE PUMPS.



The only Pump on the market with a piston that will not dry out and deteriorate from nonuse. The "Yankee" will outlast any car.

Folds up, and is carried in the Tool Box when not in use.

The big car owner carries a "Yankee" for high pressure use.

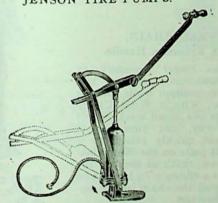
The small owner carries a "Yankee" on account of its reliability.

It's easy to reach 200 pounds pressure with the "Yankee."

No more backaches and headaches. Nothing to wear out or get out of order.

Yankee	Pump.	 3008	\$4.50
		Gauge3503	

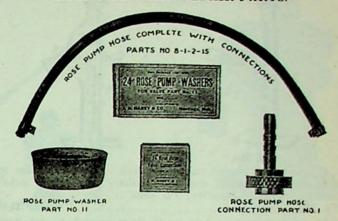
#### JENSON TIRE PUMPS.



No back-breaking effort or physical exhaustion. Made almost entirely of steel. As-inch piston of cold-rolled steel. Cylinder made of 16-gauge welded steel, packed with pure gum rubber to prevent leakage. Three feet of hose, Schrader crimped couplings and connections. Folds, and can be carried in tool box.

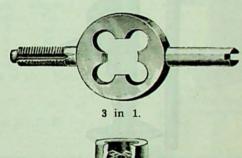
Price, each, without Gauge......3751 \$6.00

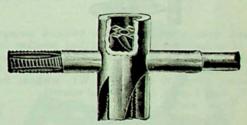
#### ROSE TIRE PUMP REPAIR PARTS.



	11/4-inch	1½-inch
No. 1. Valve Connection106	\$0.15	\$0.15
No. 8. Hose (24 inches), per ft 124	.18	.18
No. 11. Leather Valve Washer 51	.10	63 .10
Hose complete with connections, parts 1, 2 and 15403	.75	.75

#### VALVE TOOLS.



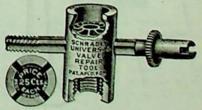


4 in 1.

Drop Forging, in one piece, carefully machined and hardened.

3	in	1.	Price,	each	\$0.25
4	in	1.	Price,	each	.30

#### SCHRADER UNIVERSAL VALVE REPAIR TOOLS.

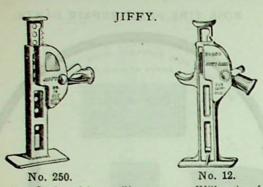


No. 2395.

Adaptable to four different uses; rethreading the valve cap thread, refinishing the top of valve stem, rethreading the inner thread of the valve, and removing of valve insides from valve stem.

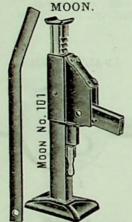
No. 2395. Price, each	No. 2395.	5. Price.	each.													. 21	0	20	1.3	Ð
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AUTO JACKS.

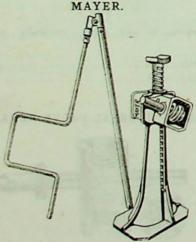


A sturdy Jack with auxiliary step. Will raise from 10 inches to 15½ inches, and the auxiliary step from 7 inches to 12½ inches. Capacity, 1½ tons.

No. 12. Price, each.....\$1.75



New and unique spring system, two-coil springs, cannot get out of order. Set cam in vertical position for raising Trip with toe or with jack handle and lower in usual way. All steel, excepting rack, which is malleable iron. Capacity, 1 ton, lifting range 10 to 15½". Wt., without handle 3¼ lbs. R. E. steel handle, black baked enamel.



Strength and ease of operation. Operated by a worm gear. Any load up to 3000 lbs, can be lifted up or down with ease, due to the fact the load is carried on ball bearings all the time. Furnished with long collapsible handle. When open, 35" long. Elevating screw, %" cold rolled steel. No. 8. 6" lift; height, 8½"; Wt., 7½ lbs. Each.....\$4.00 No. 10. 7" lift; height, 10¼"; Wt., 8 lbs. Each..... 4.00 254 P. C.



No. 1. Height, 10 inches. Raise, 5 inches. Weight, 6½ pounds. Capacity, ¾-ton. Each.......2253 \$3.50

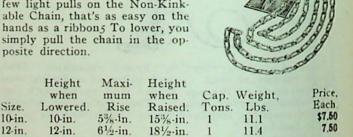
No. 3. Height, 11 inches. Raise, 6 inches. Weight, 9 lbs. Capacity, 1 ton. Each..........2856 \$4.50



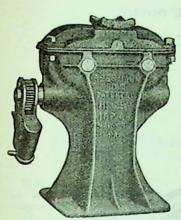
No. 5.

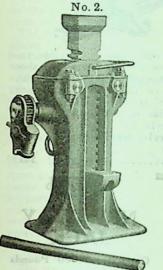
WEED CHAIN. With Extension Handle.

It's no longer necessary to stoop down in a cramped and dangerous position while jacking your car. With a Weed Chain-Jack you can stand erect, out of harm's way, and your car is easily and quickly raised by a few light pulls on the Non-Kinkable Chain, that's as easy on the hands as a ribbon 5 To lower, you simply pull the chain in the opposite direction.

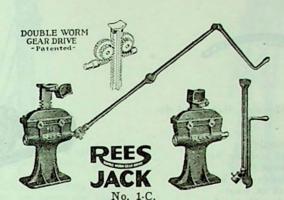


253 P. C.





AUTO JACKS.



Double Worm Gear Drive.

Four Working Parts-No pawls, springs or intricate mechanism to get out of order.

Speedy-Resistance halved-speed doubled.

Safe-No back-kick-automatically locks in either direction—secure at any height.
Powerful—"Double worm"—all forces balanced—lifts maxi-

mum load with minimum effort.

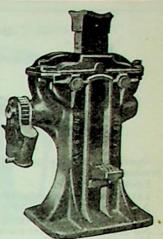
Light in weight for their lifting capacity, Rees Jacks are easily handled and operated. They have a liberal factor of safety for overloading in emergency.

No.	Capacity	Height	Lift Y	Weight	Price
*********	Tons.	inches.	inches	lbs.	each
1-C	2	**10	6	13	\$ 850
2		103/4	6	22	12.50
3-A		121/4	6	27	16.50
21-A		143/4	9	46	35.00
Nos. 1-C. 2. 3-A		lard pack	ages of s	ix. No.	21-A as

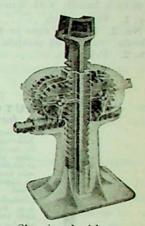
ordered.

"A"-Designates Foot Lift.

\*\*With cap raised, 11¼ inches. 254 P. C. In lots of 6 or more, 331 P. C.



No. 3-A.



Showing double wormgear drive used in these models.

SIMPLEX.



No. 21-A.

No. 36.



The Simplex can never let a car drop unexpectedly. It is absolutely locked in every position. The cap may be pulled up to the load-a Big Advantage-but nothing in the world but "pumping" can lower the load on the jack. Safety First and Always.

Capacity	No. 36, 1500 lbs.	No. 42. 2 tons.
Height		11½ in.
Lift		8½ in.
Weight		11 lbs.
Lever Bar		18 in.
Material		Steel.
Price, each		\$7.50

Close down to 5 inches.

HI-LO.

Made from the highest grades of malleable iron, cold rolled steel and drop forgings. Every jack has a large margin of safety over its rated capacity.

No. 12 designed for light cars. Range of lift 6 inches to 17 inches; lifting capacity, 1,000 pounds at 6 inches, 2,500 pounds at 10 inches, 5,000 pounds at 17 inches. Weight, 11 pounds.

For 3 to 5-ton trucks. Range of lift, 7 inches to 17 inches; weight, 25 pounds; lifting capacity, 4,000 pounds at 7 inches, 10,000 pounds at 12 inches, 16,000 pounds at 17 inches. No. 20. Price, each .....

206 P. C.

.101 P. C.

AUTO JACKS.

Hovey Garage Jack

Operates by merely "kicking up" Movable Head and depressing handle.

Locks by gravity

Lets down by merely lifting the handle.

Adjustment is made by the foot and not the hands

Four foot handle gives ample leverage.

No screwing or lever-pumping on hands and knees.

No springs or delicate parts to break or wear.

Made of malleable iron and open hearth steel. 48-inch handle with 4-inch wheels; weight, 18 pounds.

### (F) REX AUTOMOBILE JACK for GARAGE, SERVICE

A scientifically designed, high powered Jack—quick in action—strong and heavily constructed—absolutely safe in operation—built WITHOUT springs, cogs or ratchets. The REX AUTOMOBILE JACK rests firmly on a four wheel suspension—no tipping or swaying of the car when raised.

raised.

It wheels easily into position, no parts to drag. Positive in its action. It automatically Locks in Any Lifted Position. Just wheel it under the car and pull the lever. To lower it, grasp the handle and lift the lever.

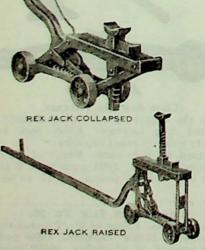
The REX JACK successfully operates under any part of the front or rear axle or chassis of any car. Constructed of high grade, heat treated steel and malleable. Every part is designed to insure long life under hard usage.

Oct naro usage.

Collapsed height 5 inches—allowing use under lowest parts of axle or springs. Highest lift without blocking 20½ inches. Higher extensions furnished on application.) Wheelbase 12 inches—width 5 inches

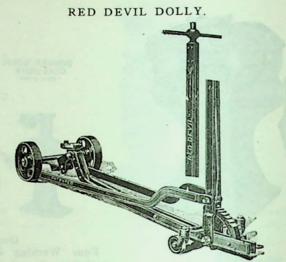
The REX JACK automatically locks at any intermediate height in its range of action. Extension positively locked at any height. Weight, complete, 47 pounds.

List Price \$20.00, F. O. B. Chicago



F. O. B. Illinois.

(F) Goods marked (F) not carried in stock; shipment from factory.



Reliable, simple and rapid in operation. Crucible steel construction. The heaviest type of car easily moved about the garage, large wheels being equipped with roller bearings. Operate under any height axle or differential. Capacity 8000 lbs. Range of adjustment 8" to 14½". Raises at one downward stroke of handle 4", dia. of wheels 8¼", face of wheels, 2" distance between wheels, 13" tread, 15" length, 4' 6", roller bearing in large wheels, crucible steel castings and mild steel bars. Wt., 125 lbs.

The Wheels Pivot.

An exclusive feature of this Jack lies in the fact that the wheels pivot and are guided and controlled by the handle.



This and its short, compact construction enable it to be quickly placed in position under either axle from the front or rear or, where conditions make this impossible, from the side of the car.

Easily Operated.

This Jack operates on the ratchet principle and its long lever handle affords ample leverage to raise heavy burdens with little effort.

Handle Always Elevated.

The handle is provided with an easy tension spring which keeps it elevated and out of the way when not being used.

Telescoping Standard.

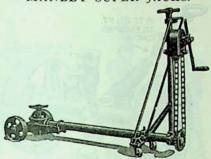
The standard is composed of two sections, the outer being operated by the lifting dogs. The inner standard can be raised by hand, giving an additional height of 5½ inches. This construction provides a minimum height of 8½ inches and maximum height of 18 inches, which, with its maximum lifting capacity of 5,000 lbs., makes it ideal for light truck use.

Construction.

The construction of this Jack is very rugged. Lifting dogs and ratchets are of hardened steel. The 8-inch wheels and castor are equipped with roller and ball bearings, respectively. Shipping weight, 100 lbs.

Price, each ......\$32.50

MANLEY SUPER JACKS.



It is built on the screw principle, which makes it safe, simple and lasting. All dogs, springs, pawls, ratchet parts, triggers, levers, etc., are eliminated.

The two-speed operating crank handle enables you to lift an ordinary car in a few seconds, and by using the back-

gears to lift the heaviest car with ease.

The rigid upright handle and the swinging pulling handle allows this jack to be pivoted on the front casters for quick positioning. Operated always from a standing position and requires five feet less space than other jacks.

Minimum height, 8½ inches; ma imum 18 inches. Weigh:

130 pounds.

No. 500. Price ...... ....\$48.00

List Net.

#### MANLEY TOWING TRUCKS.

The double post is far superior for front axle work, because the car is supported at two points far apart, giving it stability to prevent upsetting on bad roads, car tracks, etc.

The weight of the car is transmitted by the double posts to radial race ways on the fifth wheel plate, which has legs resting upon the truck body next to the wheels. This gives it almost unlimited strength. Offset pads clear all truss rods also; the body is a vertical I-beam section with 100 per cent road Wheels clearance. have eight spokes, running on hardened roller bearings with 26 inches spread. Tongue is a



Single Post.

massive 2-inch pipe and telescopes from 6 to 11 feet. By purchasing the single and double posts both types of

trucks	may be had at a small outlay.		
No. 50	7. Towing Truck with single post and		
	Steel Wheels	157	\$40.00
No. 50	8. Towing Truck with single post and		
N	Rubber Tires	184	70.00
140. 50	9. Towing Truck with double post	200	F0.00
No Es	and Steel Wheels	200	53.00
140. 51	0. Towing Truck with double post	230	83.00
No 51	and Rubber Tires  1. Towing Truck without Posts—Steel	200	05.00
	Wheels	135	35.00
No. 51	2. Towing Truck without Posts-	100	
	Rubber Tires	100	65.00
No. 51	3. Single Post only for Towing		
	Truck	21	5.00
No. 51	4. Double Post only for Towing		
	Truck	65	18.00
	List Net.		

MANLEY PORTABLE HOISTS.



This type of Portable Hoist has demonstrated itself to be exceptionally well fitted for auto service work. The principal reasons for this are: It is exceptionally stable, and therefore less liable to upset, and by having two chains it is possible to lift from both sides of the car, greatly facilitating the removal of axles and also permitting raising the chassis for working under it.

Another use to which this type of hoist may be advantageously put, on account of its straddling the complete car, is the removing of bodies, etc.

#### Chains are Positioned Anywhere Within the Uprights.

The outstanding feature of the Manley Hoist is that the chains may be positioned from the floor anywhere within the uprights. This makes it possible to locate them to exactly suit the work, so that a vertical pull is always obtained.

#### Chains Always Pull Vertically.

The positioning feature of the chains in the Manley Hoist also means that the load is always lifted vertically, with equal speed and equal effort from the lowest to the highest point. Chains which pull on the diagonal place an abnormal strain on the chains themselves, because they pull against each other. This strain is increased as the load is raised, and the speed of the raising decreases in direct proportion to the height lifted. The crank handle is brought down to an ideal height for the operator by means of the sprocket chain. It is not necessary to stoop to turn this handle.

#### Frame Is Amply Braced for Rigidity and Safety.

The frame of the Manley Hoist is made of Steel Angles, and every part is braced and trussed for ample rigidity and safety. The legs therefore will not spread.

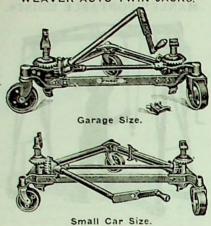
#### Legs Fold Together-Takes Up No Space.

The legs of the Hoist fold together so that it may be placed against the wall when not in use. For this reason also it may be moved between cars to locate it anywhere in the Garage.

#### Equipment.

With each Hoist is furnished two sling chains with hooks at each end. They are used for raising the chassis and attaching to motors, etc.

Cat.	, V	vidth Ins	ide		
No.	Capacity	Legs	Height	Weight	Price
81	2 tons	S ft.	7 ft. 9 in.	450 lbs.	\$110.00
83 -	2 tons	8 ft.	9 ft. 0 in.	465 lbs.	115.00
90	4 tons	9 ft.	9 ft. 0 in.	1000 lbs.	210.00
0.010			List Net.		



#### FOR EITHER AXLE.

Both size Jacks are designed to fit either front or rear axle, especially designed extension blocks being supplied for use in handling rear axles with truss rods.

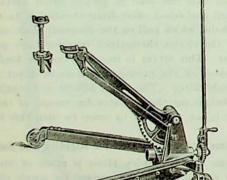
#### ECONOMIZES FLOOR SPACE.

Cars can be moved sideways, "cut in" at right angles, or turned completely around within their own length, regardless of whether they are complete or dismantled. The peculiar design of these Jacks prevents them from protruding beyond the dimensions of the car, making them a most convenient aid in loading or unloading automobiles in or out of freight cars.

The general construction of both sizes is of high carbon steel and malleable iron.

and materials	Garage	Small Car				
	Size	Size				
Shipping Weight	100 lbs.	50 lbs.				
Rubber Tired		50 lbs.				
Lifting Capacity8	,000 lbs.	4,000 lbs.				
Diameter Wheels	6½ in.	41/4 in.				
Length Handle	40 in.	34 in.				
Diameter Screw	1¼ in.	1 1/16 in.				
Weaver Twin Jacks. Price, each		\$15.00				
Weaver Twin Jacks, Rubber tired. P	rice, each	22.50				
Weaver Twin Jacks. Garage size. Pri						
Weaver Twin Jacks. Garage size. Ru	bber tired.	Price,				
each		36.00				
List Net						

WEAVER HI-LIFT JACKS.



EXTREME RANGE OF LIFT.

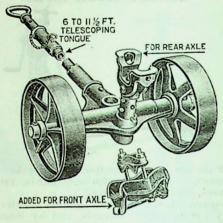
The saddle of the Jack can be lowered to a minimum height of 7 inches and raised to a maximum of 38 inches. The removable standard shown in the above cut provides an additional height up to 7 inches, giving an extreme elevation of 45 inches. The long handle, which gives great leverage, operates a worm meshing with the gear at the base of the lifting arm. Depressing the handle to the right raises the load, to the left lowers it. By removing the lever the crank on socket casting can be used to more quickly raise the saddle to the load. The saddle is automatically kept level, so there is no danger of the load sliding off.

automatically kept level, so there is no danger of the load sliding off.

This Jack is extremely rugged in construction, being of steel and malleable iron throughout, with the lifting arm of cast steel. Lifting capacity 2,000 lbs.: maximum width, 40 in.; ample to straddle largest truck wheel and narrow enough to go between front or rear wheels of any car. The two wheels nearest handle are mounted on ball and roller bearing castors and make the Jack easy to guide. Shipping weight, approximately 200 lbs. Price, each....\$60.00

TRUCK WHEEL ATTACHMENT FOR ABOVE. For removing and transporting truck wheels. Price, each.....\$10.00

#### WEAVER AUTO AMBULANCE.



#### ATTACHES TO EITHER AXLE.

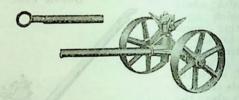
One of the greatest advantages of the Auto Ambulance lies in the fact that it can be easily handled by one man and can be attached quickly and securely to either front or rear axle of any car. The height of the standard can be varied as conditions demand by means of a heavy pin and the length of the telescoping tongue extended from 7 ft. to 13 ft., adjustable every 21/2 in.

#### CARS CAN'T BOUNCE OR SLIP.

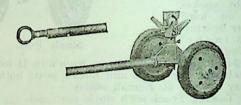
Ample provision is made for attaching the axle of the car firmly to the Ambulance, so as to prevent any play at the connection. Telescoping tongue is of double strength steel tubing; 14-inch steel axle extends entirely through the malleable iron frame; malleable iron saddles; 20-inch tread. Shipping weight, complete, 140 lbs; with rubber tires, 215 lbs. Price, each .....\$35.00 Rubber Tired. Price, each...... 65.00

CONTINENTAL WRECKING TRUCKS.

List Net.



Model S. Steel Wheels.



Model R. Rubber Tired Whels.

Model S equipped with steel wheels, 16 in. diameter and 3

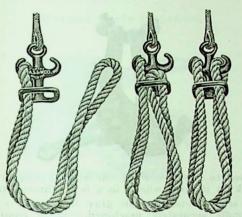
Model R has 3 in. solid rubber tires, 16 in. diameter, built of cast steel, and wheels equipped with Hyatt Roller Bearings encased in dust-proof housings.

Patented saddle fits any part of front or rear axle.

Wheels, 16x3 in.; bearings, 4 in.; Hyatt Roller Bearing; width, 26 in.; axle, chrome nickel steel, 1% in.; height, 17 to 23 in.

 Model R. Weight 195 lbs.
 Price, each.
 \$75.00

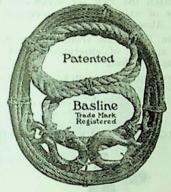
 Model S. Weight, 150 lbs.
 Price, each.
 40.00



For Passenger Car Service.

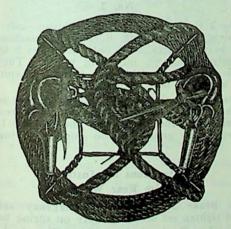
Made of galvanized flexible steel American wire rope, with forged steel double hooks and manila loops for attaching to car. Made in 25 ft. lengths for either single use in light towing or doubled for heavy towing. Packed in handy sack. Price, each ......4002 \$6.00

#### BASLINE AUTOWLINES.



This Autowline is a fo-inch wire rope, 30 feet long, used for towing autos. This line will pull a 4,000 pound car up a 20 per cent grade. Weighs only 6 pounds; coils into a roll one foot in diameter. Can be carried in tool box, or under a cushion.

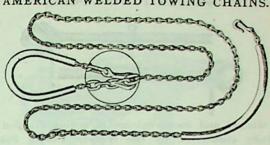
#### BUCKEYE TOWING CABLES.



Put on a reel and made with a double hook. You will not kink this cable nor break the hook. Made of crucible steel, and will stand over 7,000 pounds strain.

Price, each ......4006 \$6.00

#### AMERICAN WELDED TOWING CHAINS.



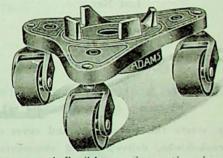
Serviceable, non-kinkable and compact towing device. Made of proof-tested, welded coil chain with a special grab hook on each end. Packed one chain in strong canvas bag.

No. 2800. Designed for lightweight passenger cars. Length over all, 18 feet. Breaking strain, 3,000 pounds. Approximate weight, 13 pounds. Made of ¼-inch (17-64) chain with 24 inches of strong canvas tubing on each end. Chain and hooks are cold galvanized.

Price, each ..... No. 2801. Designed for medium and heavyweight passenger cars. Length over all, 20 feet. Breaking strain, 8,000 pounds. Approximate weight, 34 pounds. Made of 3/4-inch (13-32) chain with 24 inches of strong canvas tubing on each end. Chain and hooks are cold galvanized.

Price, each ..... 253 P. C.

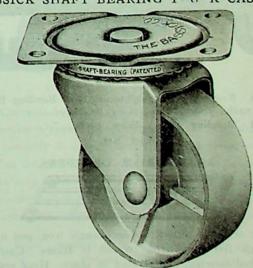
#### ADAMS CASTERS.



Very strong and flexible; main casting japanned, small casters coppered. Holes are provided for screwing casters to a box or under creepers. Opening of socket, 31/4 inches diameter. Weight, per set, 12 lbs.

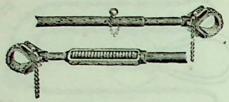
Center Range Attachments, per set...... 301

#### BASSICK SHAFT BEARING TPUCK CASTERS.



A new type caster with a differential bearing. Heavy 

#### WEAVER TOWING POLES.



The danger and inconvenience of towing disabled cars is practically eliminated by the Weaver Towing Pole. The brakes of the towing car are in absolute control of the rear car. No danger of jamming, and no tow line tripping pedestrians.

#### Spring Absorbs All Shocks.

The heavy coil spring is applied in such a manner that it cushions both pulling and ramming shocks so that there is no jerk or jar on either car. The connecting clamps are equipped with heavy steel chains thirty inches long, with a secure spring-latch.

#### The Pole Telescopes.

The pole telescopes, and is adjustable from 5 feet 6 inches to 8 feet. It is made of double strength steel tubing. Shipping weight, 30 pounds.

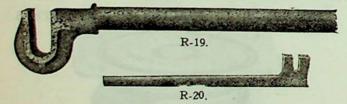
Price, each \$12.00 List Net.

#### DYER TOWING DEVISES.



Accurately steers the towed car, and saves one man's time on break-downs, deliveries and shipments of Ford cars.

#### RYSCO STRAIGHTENING AND BENDING BARS.

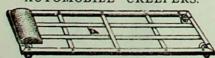


No. R-19. Front Axle Straightening and Bending Bar.
Price, each \$8.00

No. R-20. Bending Iron. Price, each 2.50

List Net.

#### AUTOMOBILE CREEPERS.



Frame is made out of one-inch angle iron, and net work of %-inch flat band iron riveted to frame. Caster steel wheels, ball-bearing, and riveted in place. Head rest enameled duck, filled with sea weed. Entire frame black baked enamel, is light but strong, and will last a life-time.

No. 181. Size, 36x12 inches. Height from floor, 21/2 inches. Weight, 71/2 pounds:

#### IMPROVED EMERGENCY AXLE FOR FORD CARS.



Designed to place a Ford car that has a broken rear axle back on its own wheels in a few minutes' time.

Made of a special analysis gray iron, with a revolving steel spindle accurately machined. It is compact, only measuring 9"x8\[^34"\]. Length of spindle over all, 7\[^34'\]. Weight, 9\[^12\] lbs.

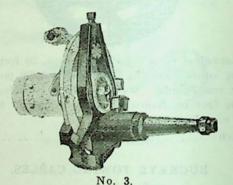
It is not necessary to carry an extra wheel, as the rear wheel on the broken axle can be used. It is also equipped with a grease cup for lubrication of the spindle bearing.

### Instructions for Installing. Use Rear Wheel.

Remove Brake Shoe. Attach emergency axle to axle flange and tighten the two set screws securely on flange. With this type of axle it is not necessary to remove the Hassler Shock Absorber.

Knock broken Ford axle from hub of wheel. Then slip the wheel on spindle of emergency axle. Screw nut on spindle tight against hub.

#### EMERGENCY AXLE FOR FORD CARS.



The No. 3 is made of special analysis soft gray iron with revolving steel spindle accurately machined. It is small and easy to carry, as it only measures 9 inches from top to bottom, and 8% inches in width. The length of the spindle from back of bracket to end of spindle is 7% inches. The weight is 9½ pounds.

The bracket fits over the housing flange of the car axle. The spindle revolves in an accurately reamed bearing of ample size and turns with the wheel. Lubrication is provided for by grease cup on spindle bearing.

### Instructions for Installing. Use Rear Wheel.

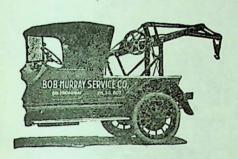
Remove Brake Shoe. Attach emergency axle to axle flange and tighten set screw securely on spring bracket nut

Knock broken Ford axle from hub. Slip wheel on spindle of emergency axle. Screw nut on spindle tight against hub.

Note: Before using axle, fill grease cup with grease and screw down all the way. Then refill grease cup.

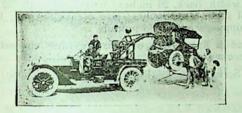
#### MANLEY TWO-TON WRECKING CRANES.

Mounted Ready for Service.

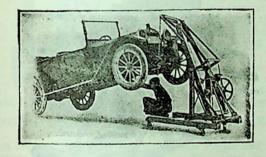


Manley Wrecking Cranes will handle wrecks of any description with one-third the labor, and in one-quarter to one-tenth of the time required by any other method. They are independent of road conditions; mud, snow, ruts, deep sand and chuck holes do not affect them. They are 100 per cent method of handling wrecks. Easily and quickly mounted on a service car. Tilting beam a necessity. Weight, 425 lbs

No. 101. Price .......\$113.0)

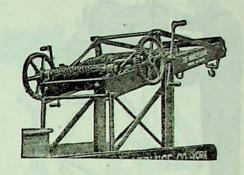


. A Dual Purpose Crane.



The Manley two-ton Combination Wrecking Crane is easily and quickly converted into a Portable Floor Crane by mounting it on its base. It is light, strong and well-balanced. It has a deep overhang, which is necessary to garage work. Capacity as Floor Crane 1½ tons. Lift 7 feet. Constructed throughout from steel except gears and portable base. Weight 525 lbs.

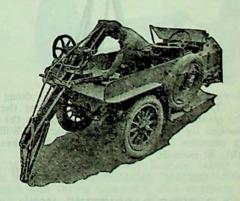
MANLEY FIVE-TON WRECKING CRANES.



The Manley five-ton Wrecking Crane is built along the lines of the lighter types. It is heavier, stronger, and has two chain hoists, four sheave pulleys and four wraps of chain giving a combined strength of 48,000 lbs. Beam may be tilted to suit job, and to allow outfit to pass through low places. This crane is made from steel, weighs 950 lbs., is quickly assembled and attached to chassis if not permanently mounted. Width, 30 inches. Length of frame, 96 inches.

No. 105. Price ......\$275.00

### MANLEY TWO-TON QUICK DETACHABLE WRECKING CRANES.

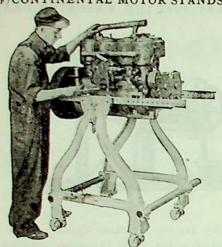


This Crane is built on exactly the same principle as the Combination Crane, except that it is designed to be almost instantly detached from the car by removing two pins. Can be removed or remounted in about three minutes. It is a heavy duty two-ton job with ample overload capacity, and is sold with or without the hoist mechanism. Cannot be converted into a Portable Floor Crane.

No. 102. Price, complete with winch and chain.....\$95.00 Weight, 375 lbs.

No. 103. Price, without the winch and chain...... 65.00 Weight, 225 lbs.

#### (F) CONTINENTAL MOTOR STANDS.



Makes every part of any motor accessible for good work. Fits any make of motor, any size. Portable; easily moved from place to place. Takes little floor space. Compact; no projecting parts to interfere with work. Every stand equipped to handle Ford motors. Instantly adjustable to any width from 0 to 30 inches. Stand 39 inches high. Floor space, 29x36 inches. Weight, 265 pounds.

Price, each, F. O. B. Factory in Michigan.....\$40.00

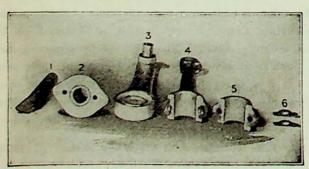
List Net.

#### EKERNS MOTOR STANDS FOR FORD CARS.



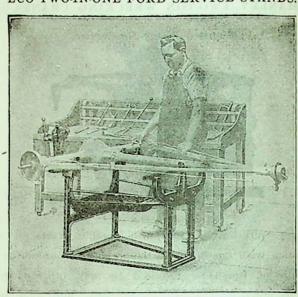
A handy device for use in shops and garages doing Ford engine work. The stand is so constructed that the part screwed to the motor will revolve in the clamp on the stand and can be locked by tightening the lock screw. Will hold motor in any position. 34 inches high. 30x32 inches floor space. Weight, 50 pounds.

#### H. & P. FORD BABBITTING JIGS.



Made especially to hold Ford connecting rod. Accurate and so arranged that bearing metal takes a perfect seat.

#### ECO TWO-IN-ONE FORD SERVICE STANDS.



#### Specifications:

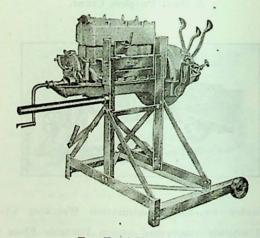
The "ECO" Two-in-One Ford Service Stand is built of castings of the best grade of gray cast iron and structural steel. Bolted parts are rigidly bolted together, forming a very stiff support for use in a garage. Each stand is provided with a large steel oil pan; also with a tool shelf. These are supported from the spacing rod at the top of the stand and held in such position as to be ready for service without shifting from their position.

No. S-12 Service Stand. Height, 27 inches; width, front, 13 inches; width, back, 26 inches; length over all, 32 inches; size of tool shelf, 11x12 inches; size of grease pan, 13x20x13 inches. Shipping weight, 185 pounds.

The stand is finished in oil-resisting blue enamel. It is shipped knocked down, ready to be assembled.

No. S-12. Service Stand. Price, each......32501 \$32.50

#### K. & S. ENGINE STANDS.



For Ford Engines.

Is portable or stationary. Easily wheeled to any desired place. One screw only is necessary to attach engine to stand.

Floor space occupied, 28x36 inches.

Height over all, 37 inches.

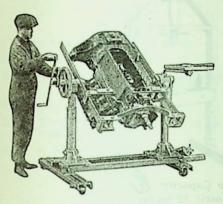
Weight, 100 pounds. Shipped knocked down.

Price, each ......\$45.00

203 P. C.

(F) Goods marked (F) not carried in stock; shipment from factory.

#### MANLEY UNIVERSAL ENGINE STANDS.



The universal suspension bar, a fitting suspending 75 per cent of all motors in use, the sliding brackets which adjust themselves to all motor suspensions without holes in the side rails, the height adjustments, etc., are paramount features of superiority.

of superiority.

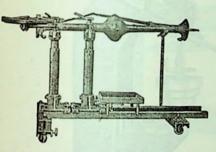
The unit construction enables them to be converted into Axle

Stands, thereby tripling their value to the Garage. By removing the Engine Stand parts, and putting on the Axle Stand Attachments, they are converted from one to the other in three to five minutes.

They will mount 85 to 90 per cent of all motors without special attachments, on account of the Universal Suspension Bar. Made in two types, Geared and Plain. The cone locking clutch is a distinctive Manley feature, and enables the operator to place and lock the motor in any position without the use of pins or other makeshift methods. Cadillac, Dodge and Overland 90 require special fittings, which can be furnished.

be i	urnished.	
Cat.	No. Weight	Price
169	Base Unit only	\$30.00
197	Plain Engine Stand Parts123 lbs.	35.00
198	Geared Engine Stand Parts145 lbs.	49.00
170	Plain Stand complete without Tray 289 lbs.	65.00
171	Geared Stand complete without Tray 310 lbs.	79.00
172	Tool Tray 12 lbs.	5.00
173	Axle Attachment without Separate Sup-	
	port 35 lbs.	12.50
174	Separate Support for Axle Attachment 10 lbs.	2.50
183	Ford Universal Head complete with	
	Fitting 46 lbs.	24.00
178		
	Universal Engine Stand 21 lbs.	9.00

#### MANLEY UNIVERSAL AXLE STANDS.



The Stand is adjustable to all types of axles, front or rear, split or solid. The offset clamping jaws are so constructed that they firmly hold any axle, and provide clearance for the truss rods. The adjustable outboard support is an im-

portant feature, and is a necessity in assembling split axles.

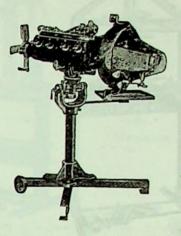
### SWINGING TOOL TRAY A TIME AND ENERGY SAVER.

Each clamping head is provided with a boss and is drilled to receive the swinging tool tray. The tray is just as efficient and just as wonderful a time saver on the axle stand as on the engine stand. It swings to any position around the axle, and the tools are always at the workman's finger tips.

It is portable on its own casters, and is adjustable in height. A light sheet steel Grease Pan of exceptional size is furnished.

furnished.	
Cat. No. Weight	Price
187 Universal Axle Stand less separate	
support	\$42.50
1/4 Separate Support 10 lbs.	2.50
1/2 Tool Tray	5.00
The following Attachments are used to convert th	e Axle
Stand into an Engine Stand: 197 Plain Engine Stand Parts	\$35.00
198 Geared Engine Stand Parts145 lbs.	49.00
List Net.	

### MANLEY FORD-CHEVROLET UNIVERSAL ENGINE STANDS.



The new Fitting enables the engine to be mounted in such a way that all parts are accessible, as well as the center bearing nut.

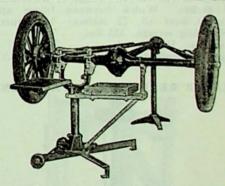
The cone clutch locking method allows the mechanic to lock the motor in any position in a complete circle. The whole power plant, including the Oil Pans, can be assembled or disassembled while on the Stand.

The improved semi-portable diagonal base automatically locks itself on the floor.

A boss and angle clip on the fitting relieve the cap screws of all strain—elim-

inating the danger of breaking water jacket. The Axle Stand parts may be attached in two to three minutes, converting it into an efficient Axle Stand. Weight Cat. No. Price 190 Ford Universal Engine Stand without Tray ......106 lbs. \$39.00 Tool Tray ...... 12 lbs. 5.00 178 9.00 192 Chevrolet Universal Engine Stand without Tray ......112 lbs. 39.00 Ford Fitting ...... 16 lbs. 9.00 Base Unit only..... 168 60 lbs. 15.00 Ford Universal Head, complete, with 183 24.00 Chevrolet 490 and F. B. Universal Head complete with Fitting..... 50 lbs. 24.00 191 Axle Attachment for split type Axles.. 43 lbs. 15.00

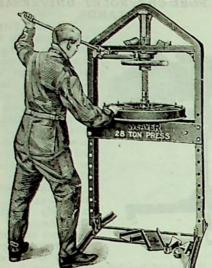
#### MANLEY FORD-CHEVROLET AXLE STANDS.



The Manley Ford-Chevrolet Engine Stand is converted into an Axle Stand by removing two cap screws, releasing the clutch and fitting assembly, and applying to the yoke the two clamps. A collar is placed over the upright to support the grease pan and outboard support. Three minutes is required to do this. Separate support is included for torque tubes. This dual purpose feature of the Manley Stand triples its value to the Garage. It is adapted to all types of split rear axles and any front axle; is self-contained without the necessity of bolting to the floor. When converted into an Axle Stand it is in no sense a compromise, but a practical and efficient piece of equipment.

but a practical and emercine piece of equipment.	
Cat. No. Weight	Price
168-191 Axle Stand, Ford-Chevrolet and	
split type Axles103 lbs.	\$30.00
172 Tool Tray 12 lbs.	5.00
The following Attachments are used to convert th	e Axle
Stand into an Engine Stand:	
183 Ford Universal Head, complete	
with Fitting 46 lbs.	\$24.00
178 Chevrolet 490 and F. B. Fitting. 21 lbs.	9.00
184 Chevrolet 490 and F. B. Universal	
Head, complete with Fitting 50 lbs.	24.00
179 Ford Fitting 16 lbs.	9.00

WEAVER FORCING PRESSES.



Enormous Leverage.

The lever mechanism provides a leverage of 1500 to 1 for normal service. This leverage can be doubled by shifting the ratchet arm to the center socket in the lever block.

#### Equipment.

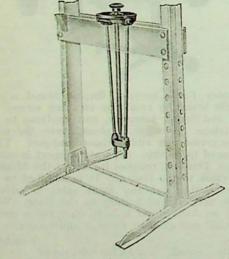
A pair of vise blocks is provided for holding round and irregular pieces. Two channel blocks are also fur-nished regularly for supporting gears, etc., when being pressed off of shaft, etc. Two blocks which attach to either side of the bolster furnish a very wide bearing for straightening large heavy bars or shafts, etc. Floor space, 36x36 inches.

#### Construction.

Frame one piece, heavy 5-inch channel steel; hand wheel 15 inches in diameter; screw 2 inches in diameter, with 3-pitch Acme mill cut thread; range of movement approxi-

Width, 42 inches; weight, 520 lbs. Price, each...... 95.00

#### WEAVER REAR AXLE ATTACHMENTS.

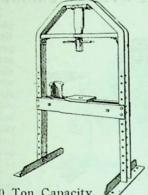


Indispensable in doing Ford repair work. This attachment is especially useful when the pinion is being replaced on the axle.

#### Construction.

Face plate included with this attachment is extra heavy. The side rods are of 5%-inch high carbon stock, 36 inches long. Shipping weight, complete with face plate 35 lbs.; less face plate, 10 lbs.

Price, each ..... Price, each, less Face Plate...... 4.50 (F) LOURIE SCREW ARBOR PRESSES.



Type C. 20 Ton Capacity.

Distance between posts: 12 inches Frame: One-piece 5-inch heavy Channel Steel.

Bolster: Two-piece 5-inch heavy Channel Steel. Truss Brace: One piece of 5-inch heavy Steel Channel Feet: Two 3x3x1/4x30 inches heavy steel angles.

Screw: 2-inch diameter, with swivel head, 4 pike Capstan.

Length of thread 14 inches.

Screw Casing—Heavy casting, 14 inches long. Platen—Cast movable plate, 7x10 inches, with 2-inch hole.

V Block—6 inches long for spacing. Lever—Tool steel bar, 1 inch x 4 feet.

Lever Extension—Piece of pipe for heavy work. Adjustment of Bolster—30 inches.

Maximum Distance between Bolster Plate and Screw-40

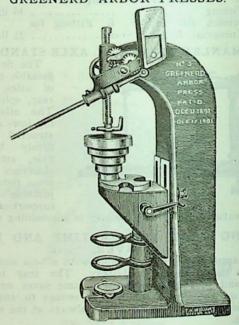
Bolster up Distance between Bolster Plate and Screw-71/2 inches

Width Between Posts-32 inches.

Total Height-70 inches.

List, Net.

GREENERD ARBOR PRESSES.



No. 5.

The leverage is increased to 150 to 1. This is accomplished by means of a train of gears, acting upon two pinions, which engage the rack.

The gears subject to the greatest strain are Chrome Vanadium Steel. All the gears are Heat Treated.

With this press, one man can exert ten tons pressure, two men, 16 to 18 tons.

Base, 24 by 36 inches. Maximum over plate, 30 inches, minimum 17 inches.

Movement of rack, 151/2 inches.

Weight, 1550 pounds. Height, 66 inches. No. 5 Press. Price, each.....

List, Net.

List Net.

(F) Goods marked (F) not carried in stock, shipment from factory.

#### MANLEY 22-TON PRESSES.

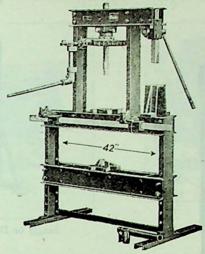
Extreme height over screw 78 in. Floor space 46x30.

Upper Press 19 in. wide by 20 in, under screw.

Opening in tables 51/s in.

Lower Press 42½ in, wide by 45 in, wide under screw.

Screw 4 pitch 50 point carbon steel 2 in diameter.



Travel of screw 12 in. (does not revolve).

Handwheel 14½ in diameter with 30 notches.

Frame 5 in. heavy section channels.

Lower table 6 in, heavy section chan-

Maximum clearance between table 20

The above cut shows the Manley Combination Press, consisting of a powerful Screw Press, a high speed Rack and Pinion Sensitive Press and a Straightening Attachment in one unit. This combination is the only one covering the complete range of auto service work efficiently.

Its 42 in, clearance is necessary for wide work and straightening jobs; its 30 tons capacity is required to handle all autowork. The Rack and Pinion Press is essential for light work. The Straightening Attachment is used continuously in every Garage. Combining the three in one unit is very much superior to three separate units, and the cost is only about one-half.

Garage. Combining the three in one unit is very much superior to three separate units, and the cost is only about one-half.

The Manley 22-ton Press is equipped with four distinct leverages, each one having its corresponding speed and power.

The change from one leverage to another is made so easily and quickly that it encourages the operator to use the leverage most suitable to the work.

Leverage No. 1 consists of a hand wheel, and is used when light pressure is needed.

Leverage No. 2 is used when pressures up to eight tons are required; ten notches on the hand wheel are obtained at each stroke. The high speed ratchet leverage eliminates the criticism against all other screw Presses as being too slow.

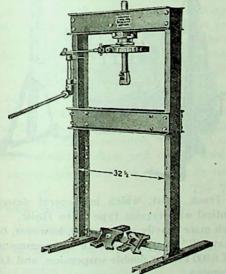
Leverage No. 3 is obtained by inserting bar in the socket on the left upright, and connecting the crank arm to ratchet arm in which pin is located. This leverage is used for work from eight to twenty tons, and a speed of two notches per stroke is obtained. Leverage No. 4 is made by inserting screw on crank arm in the inner hole, and is used for pressures ranging from twenty to thirty tons.

The horizontal stroke is used so that muscular action can be brought into effect, as a man can pull more than twice his weight. The lever bar is placed at an ideal working height, and the stroke is made by the operator in such a position that he can see exactly what he is doing

ne ca	in see exactly what he is doing.	
Cat.	No. Weight.	Price.
1	Plain 22-ton Press	\$100.00
21	22-ton Press with Rack and Pinion Attachment	130.00
1-49	22-ton Press with Straightening Attachment	115.00
21-49	22-ton Press with Rack and Pinion Attachment and Straightening Attachment	145.00

MANLEY 22-TON 32-IN. PRESSES.

MANLEY RACK AND PINION ARBOR PRESSES.



Leverage efficient and powerful so that one man can easily

exert 30 tons without bolting Press to floor.

Extreme height over screw 80 in. Table 6 inch heavy section channels; top frame the same. Opening in tables 5½ in. Uprights 5 in. heavy section channels. Floor space 36-in. x 36-in. Screw 4 pitch 50 point carbon steel 2-in. dia. Travel of screw 12 in. Clearance between uprights 32½ in. Under screw 48½ in.

Equipment 2 Universal V Plates, 1 V Nose for screw and 1 operating handle.

No. 2. Plain Press, weight 430 lbs. Each......\$90.00

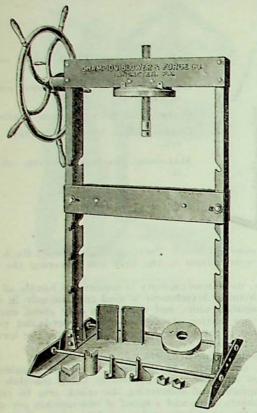
List Net.



Leverage-44 to 1.

This Press is especially adapted to all Garage work within its capacity. The strength of it will be appreciated when its weight of 120 lbs. is considered. This is about the weight of cast iron presses of this type, and as steel is three times stronger than cast iron, the Manley Press is unbreakable. It is amply braced for exceptional rigidity. Made of steel except the Rack and Pinion housing. The Rack has coarse pitched teeth, 15%-in. wide, and the Pinion is high carbon steel. The handle is 7%-in. steel, and slides in the Pinion Hub for different leverages. Is equipped with a sliding V block, which automatically adjusts itself to all sizes of arbors, hubs and bushings. Clearance under ram 13 inches. No. 10. Capacity 2 tons. Weight 118 lbs. Price.....\$36.50

#### CHAMPION 30-TON PRESSES.



Leverage 1500 to 1. One hundred lbs. exerted on hand wheel develops seventy-five tons pressure on screw, making it possible to press, straighten or pull all classes of work for garage and machine shop. Full equipment with each machine, as illustrated. Hand wheel geared 3 to 1—enclosed bevel gears operating a 2" dia. 4 pitch Acme Screw, the hand wheel weighing 57 lbs., issued as a fly wheel to run spindle up or down quickly.

Built of 5" Channel Steel Uprights. Cross Bars 6" wide, %" thick. Height to top of frame, 65". Width between uprights, 32". Up and down travel of spindle, 9". Floor space, 36x39". Weight, 485 lbs.

Price, each ......\$70 List Net.

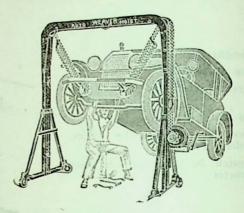
ACCO AUTOMOBILE SLING CHAINS.



f6-inch. Length of each branch over all, 9% ft. Safe working load, 1,300 lbs. Approximate weight, 21 lbs.

Price, each \$5.50

#### WEAVER AUTO HOISTS.



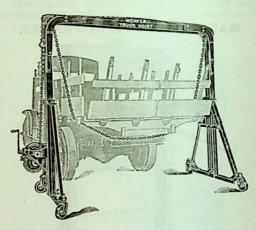
Single or Double Suspension Safety-Worm Hoist.
Telescoping Frame.

The frame of the Hoist is designed so as to permit the height of the arch to be increased approximately 24 inches, allowing the uprights to be raised to the desired height in the braces on either side, by means of its own power. This increased height enables the Hoist to raise the rear end of a limousine or a touring car with the top up, for removing the rear system.

Weaver Auto Hoist is carried upon four ball and roller bearing castors 5 inches in diameter, which permit it to be transported with perfect ease. The main construction throughout is of steel, giving the greatest possible strength in comparison with its height. Height,  $7\frac{1}{2}$  feet to 9 feet 2 inches. Shipping weight, 545 pounds.

Price, each ......\$120.00

#### WEAVER TRUCK HOISTS.



Weaver Truck Hoist, which in general design is practically identical with regular type Auto Hoist.

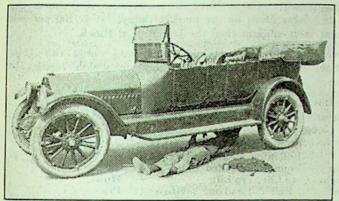
It is much more heavily constructed, however, being made of very heavy "I" Beam stock with a recommended lifting capacity of 6,000 lbs. for double suspension, and 4,000 lbs. for single suspension.

The lifting mechanism is of the same worm gear, but has a compound leverage of 400 to 1. An auxiliary lever operated directly onto the drum enables the chain to be adjusted to the load very rapidly. Width between frame, 8 ft. 4 in.; minimum height, 8 ft. 4 in.; maximum height, 10 ft.

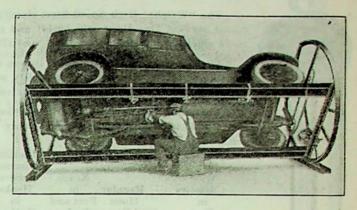
Shipping weight, 940 lbs.

Price, each .....\$200.00

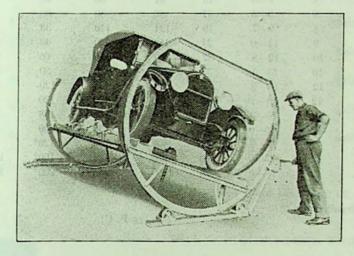
(F) TURN-AUTOS.







The Modern Way.



As the Turn-Auto is a new tool to the mechanic, it will require study on his part to secure the most advantageous position for the service he wishes to perform. In some operations the car is turned to a certain point, while parts are loosened or removed, and then to another angle to complete the operation.

In general you will find that an angle of seventy degrees is used the most for service requiring an hour or more, while for minor adjustments the car may be rotated to forty or forty-five degrees.

The battery should be removed from the car. This is required, not so much on account of loss of electrolite, but to avoid injury to the mechanic and the car. Some mechanics remove the caps from the cells and replace same with corks.

The Turn-Auto should not be rotated without a car in place owing to the fact that the weight of the car acts as a counter balance.

The complete shipment consists of these items:

The front rocker, rear rocker, two base channels with rollers, two track I-beams on which the car is run, two skids fastened together, two steel bumpers fastened together, one 7" channel Jack support, one box which contains winch, rotator, ten iron braces, four chain fasteners, bolts and rotator handle and four cast iron filler blocks. One small crate containing metal sign, instruction sheet and display card in separate package.

The above items should be checked on receipt of the TURN-AUTO and carrier notified at once if any are missing.

#### The Turn-Auto Consists of the Following:

1. Rear base channel(1)	9. Track I-beams(2)			
2. Front base channel(1)	10. Lower braces(4)			
3. Holes in channel for rotator straps(2)	11. Curved brace(1)			
4. Rotator straps(2)	12. Curved brace at rotator(1)			
5. Front Rocker(1)	13. Skids(2)			
6. Rotator(1)	14. Rear top braces(2)			
7. Rear rocker(1)	15. Chain clamps(4)			
8. Filler blocks(4)	16. Winch(1)			
Price, each, f. o. b. factory in Ohio				

List Net.

(F) Goods marked (F) not carried in stock; shipment from factory.



#### WRIGHT HIGH SPEED STEEL HOISTS.

The "Wright" High Speed Steel Hoist is the last word in Chain Hoist Construction. For hard, continual service, this Hoist will outlift and outlast any other Hoist on the market today. It is 100 per cent more efficient than the Screw Hoist, and 175 per cent more efficient than the Differential Block.

The use of Steel and Malleable Iron in every working and load-sustaining part, has made this Hoist capable of safely withstanding loads very much above the rated capacity, and one in which repairs for broken parts are almost entirely eliminated.

The New Non-Fouling Hand Chain Guide on this Hoist permits of raising and lowering the load by a chain pull from any angle, the customary jerking and catching of the chain being entirely done away

			Minimum		Chain	Feet of			
			Distance		Pull in	Chain			
		Reach	Between	Net	Pounds	Handled		Extra	
Capacity	Regular	in	Hooks	Weight	to Lift	to Lift		Hoist,	
in	Hoist	Feet and	in	in	Full	Load one	Gross	Price	
Tons	in Feet	Inches	Inches	Pounds	Load	Foot	Weight	per Foot	Price
1/4	8	9-3	15	61	60	10	67	\$1.80	\$ 70.00
1/2	8	9-3	15	61	60	20	67	1.80	70.00
1	8	95	17	80	80	30	95	1.90	90.00
11/2	8	9-7	19	124	110	33	140	2.00	120.00
2	9	11-0	24	188	120	40	213	2.10	140.00
3	10	128	32	200	110	66	228	3.00	180.00
4	10	13-1	37	290	120	80	317	3.20	220.00
5	12	15-9	40	380	105	120	430	4.30	280.00
(F) 6	12	15-10	40	390	120	120	430	4.30	339.00
(F) 8	12	16-3	51	470	135	168	504	5.40	400.00
(r)10	12	16-9	57	570	130	200	624	6.50	. 480.00
(F).12	12	16-9	57	800	130	120*	909	8.60	600.00
(r)16	12	17-0	60	950	130	160*	1112	10.80	720.00
(F)20	12	180	75	1300	135	200*	1635	13.00	850.00

Sizes 3 to 20 tons have lower blocks.

371/23 P. C.

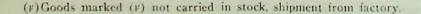
#### WRIGHT STANDARD SCREW HOISTS.

The "Wright" Standard Screw Hoist is a light; durable, powerful hoist, requiring a minimum of head room, and is particularly adaptable to contractors' use and general repair work, in fact, wherever a hoist has to be continually shifted about.

This Hoist is so constructed that one man can lift the full load, the hand chain pull being cut down at the expense of speed.

All working parts of this Hoist are enclosed in a dust-proof case, and run in oil, thus insuring perfect lubrication.

Capacity in Tons	Lift in Feet	Shortest Distance Between Hooks	Extreme Length Feet and Inches	Weight	Gross Weight	Extra Lift, Price per Foot	Price Complete
1/2	8	13	9—1	55	67	\$2.50	\$50.00
1	8	15	9-3	60	75	2.60	60.00
11/2	8	17	9-5	82	113	2.70	80.00
2	9	21	10-9	105	131	2.80	100.00
3	10	24	12-0	154	187	3.80	150.00
(F) 4	10	25	12—1	190	225	4.00	190.00
(F) 5	12	34	14-9	340	370	5.30	280.00
(F) 6	12	28	14-4	240	270	5.50	360.00
(F) 8	12	33	14-9	280	310	6.00	420.00
(F)10	12	44	15-8	550	621	6.50	550.00
			37½6 I	P. C.			





<sup>\*</sup>For each hand chain.

#### WRIGHT DIFFERENTIAL CHAIN BLOCKS.

The "Wright" Differential Chain Block is particularly adaptable to light loads which must be handled only ocasionally.

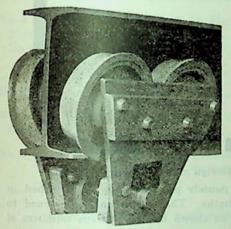
As a hoist for farms and plantations, it is to be especially recommended, on account of its simplicity and reliability, it having but few parts.

A special hardened hoist chain, running in even pitch sheaves, has made this a block of the very highest quality.

erine to	Regular Hoist	Minimum Distance	Net	Chain	Chain	Extra Lift,	
Capacity in Tons	in Feet	Between Hooks	Weight, Pounds	Pull, Pounds	Pull, Feet	Per Foot	Price, Complete
**		17 in.	22	72	18	\$5,60	\$36.00
1/2		21 in.	30	122	24	5.60	42.00
1		26 in 32 in.	51 81	216 246	30	6.40	56.00 72.00
2		39 in.	122	308	42	6.80	90.00

Each foot of extra lift includes four feet of chain.

607, 103 and 108 P. C.



#### (F) WRIGHT STEEL TROLLEYS.

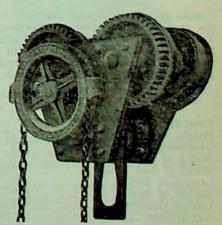
#### Plain and Geared.

"Wright" Steel Trolleys are made up in both Plain and Geared form, and in all capacities up to and including ten tons, sizes longer than this being made up special.

These trolleys are made up from solid steel side plates, and have straight-faced wheels, which stand perpendicular to the I-Beam flange.

On all sizes above one ton, the trolley wheels run on large roller bearings. The equalizing pin connecting the two halves of trolley may be taken out so that trolley can be placed on I-Beam at any point.

Capacity	Size	List Price,	List Price,
in Tons	of I-Beam	Plain	Geared
1/4	5 to 12 inches	\$32.00	
1/2	5 to 12 inches	32.00	
1	5 to 12 inches	40.00	\$70.00
1½	6 to 12 inches	52,00	76.00
2	7 to 12 inches	56.00	80.00
3	8 to 12 inches	66.00	94.00
4	10 to 15 inches	74.00	104.00
5	12 to 15 inches	86.00	130.00
6	12 to 15 inches	110.00	160.00
8	12 to 20 inches	140.00	190.00
10	12 to 24 inches	170.00	230.00



The "Wright" guarantee of perfect satisfaction protects users of Wright Products.

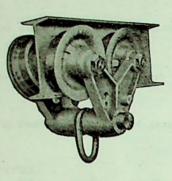
(F) Goods marked (F) not carried in stock, shipment from factory.

451 P. C.



#### CURTIS I-BEAM NON-GEARED TROLLEYS.

The trolley being placed on I-Beams which have both ends imbedded in a wall, each wheel has an axle which is pressed in, causing them to turn as one unit. The axle is supported at each end in bronze bearings, making eight bearings for each trolley. Pin connection of the wrought steel side plates, enables the trolley wheels to adjust themselves to the track, insuring easy running on short curves, and distributing the load equally upon the four wheels of the trolley.



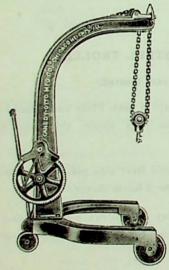
### WITH PLAIN SELF-OILING BUSHINGS.

#### I-BEAM TRACK.

Capacity in	Tons	1	2	3	6	10
Size of Beam:	Minimum	6" .	8"	10"	12"	15"
	Maximum		18"	24"	24"	24"
Distance betw	reen Supports					
of Beam		10'6"	11'0"	13'0"	12'0"	11'0"
	olley, lbs		95	160	270	485
Least Radius	of Trackway					
Curve		3'0"	4'0"	5'0"	6'0"	8'0"
Diameter of	Wheels	416"	6%"	81/4"	101/s"	123/4"
Price, each		\$20.75	30.00	40.00	65.00	118.00
Distance betw of Beam Weight of Tro Least Radius Curve Diameter of	Maximum reen Supports olley, lbs of Trackway	15" 10'6" 50 3'0" 41'5"	11'0" 95 4'0" 68%"	13'0" 160 5'0" 8 <sup>1</sup> / <sub>4</sub> "	12'0" 270 6'0" 101/s"	11'0' 485 8'0' 12 <sup>3</sup> / <sub>4</sub>

List, Plus 101 P. C.

#### (F) C-O. PORTABLE FLOOR CRANES.



Auto repair shops and machine shops can do away with the expense of the overhead traveling crane or chain blocks. The Canady-Otto Portable Floor Cranes are suitable for all kinds of heavy lifting, cutting the time lost in handling materials, that counts against production, and in many cases paying for itself quickly in hundreds of machine shops.

#### Specifications.

	No. 1	No.2	No.3
Total Height	6'	6'41/2"	7'4"
Height of Hoist	4'11"	5'31/2"	6'3"
Overhang	2'3"	2'6"	2'8"
Width of Bed, Outside		2'8"	2'101/4"
Width of Bed, Inside	1'91/2"	2'8"	2'3"
Length of Bed	3"1/2"	3'31/2"	3'6"
Height of Bed1	13/4"	113/4"	113/4"
Lifting Capacity	1 ton	11/2 ton	2 ton
Net Weight 5	80 lbs.	670 lbs.	780 lbs.
Price, each	\$88.00	\$101.00	\$110.00
T' N			

#### (F) WAGNER OVERHEAD CARRIERS.



A practical and useful equipment that will pay for itself in a short time. When necessary to work under automobile, just raise it with the Wagner Overhead Carrier. Wagner Double Trolley or Eight-Wheel Carrier is especially adapted for heavy articles weighing up to 2,000 pounds. Wheels are 3 inches in diameter and equipped with roller bearings.

No. 1200. Wagner Double Trolley Carrier.

Price, each ......8503 \$10.50

#### (F) WAGNER HAWKEYE TRACK.

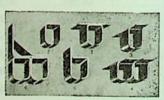


No chance for any foreign matter to lodge in track.

Track weighs 3% pounds per foot and is furnished in 4, 6, 8 and 10 ft. lengths. The track can be fastened to ceiling or side walls, as shown by the various numbers of brackets furnished.

No. 25. Wagner Track. Price, per foot...........752 \$0.76

#### (F) WAGNER HAWKEYE BRACKETS.



Many times a double track is desirable, when the double or twin brackets No. 4 or 6 should be used.

(F) Goods marked (F) not carried in stock, shipment from factory.

MOSCO FLOATING PLUNGER WHEEL PULLERS.

GREB BEARING SLEEVE EXTRACTORS.



Starts a stuck wheel instantly. Strike the plunger, turn the screw, strike again and the wheel comes off without injury to hub threads, spokes or axle.

No. 4 Fits Buick 10-24-25-26-27-32-33-34-35-36-E4. Fits Case R 1914; Chandler 16-17-18;

Chevrolet H2-H3-H4.

Fits Daniels A 1916; Early 1917; Dort 4-5-5A-6-9-29.

Fits Empire 31-31-40-33-40-50-51;

Hudson 20-33, 1910, 11, 33, 1912.

Fits Interstate All Models T; Milburn Electric 15-151-22.

Fits Monroe Oakland 30-35-36-37-38.

Fits Rush Truck Saxon All Models R. V. M. 14-16-18-20-21.

No. 5 Fits Buick B24-B25-C24-C25-16-17-19-21-28-29-30-31-37-

Fits Daniels late 1917; Davis 6H 1917.

Fits Moline Knight MK40-MK50 and first 250 Model G.

Fits Oakland 40-42-48-49.

No. 2 Fits Chevrolet 4-90; Ford All Models. Wt. 24 oz.

No. 6 Fits Ford Truck; Maxwell, all cars 52001 to 54000;

Oakland 32. Fits Overland 75-90 except wire wheels.

No. 8 Fits Maxwell all cars 84351 to 169919. Wt. 32 oz. 

No. 3 Fits Overland All Models 60-69-74-80-81-83-85.

Fits Saxon S-2, S-4, Y18, 60-61-62-63. Wt. 36 oz.

#### WHEEL PULLERS FOR FORD CARS.



Indispensable to the Ford owner. Easily removes the rear wheels. Substantial and well made.

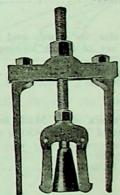


No. E6.

For removing Bearings, Bearing Sleeves, Cups, Races, Bushings, etc.

Positive Grip. A glance at the illustration tells the story. The extracting is all done by the wedge which forces the hooks into or behind the part to be removed. The hooks cannot spring and let go as the more force applied the harder the wedge forces them outward. Bushings and Bearings that are set in parts in such a way that you cannot get behind them are as readily extracted as any.

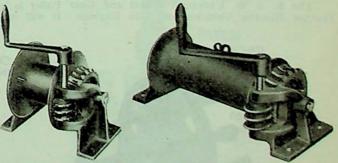
No. E6 Two Arm Bushing Extractor, but will be found 



No E7

Designed for heavy duty work such as Timkins pressed into housings, wheel hubs, etc. No. 7E. Two Arm Extractor. Capacity 11/2" to 31/2" inside. Price, each ..... 103 P. C.

#### SAFETY WORM GEARED WINCHES.



No. 10A and 12A.

No. 13A and 15A.

Cast Iron Frame, Drum, Gear and Worm.

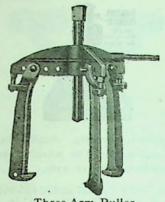
Especially adapted for conditions where it is necessary for the load to remain suspended.

The load cannot run down; the handle must be turned. No pawls used.

1	Dia. of Drum	Length of	Single Line	Price.
No.	Inches	Drum Inches	One Man, Lbs.	Each
10A	51/2	6	750	\$18.00
12A	51/2	6	1000	24.00
13A	51/2	14	750	20.00
15A	8	101/2	1000	30.00
-		203 P. C.		

#### CRANE'S WHEEL AND GEAR PULLERS.





Two-Arm Puller.

Three-Arm Puller.

A powerful, efficient tool for quickly and safely removing automobile and truck wheels, gears, flywheels, cams, collars, sprockets, etc., bending pipe and straightening shafting.

Built throughout of the highest grade materials and especially designed to withstand the rough usage and abuse incidental to ordinary repair shop practice.

Thoroughly guaranteed against defective material or poor workmanship, and all defective or broken parts replaced free of charge.

#### No. 0 PULLERS.

#### No. 2 PULLERS.

#### No. 3 PULLERS.

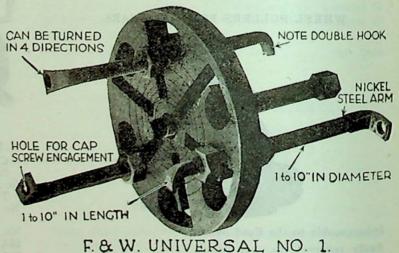
Heavy car and truck size. Made in all three styles. Takes diameters up to 16 inches. Equipped with one set of 7-inch locking arms, one set of 11-inch locking arms, or one set of 7-inch and one set of 11-inch locking arms.

	Two-Arm Puller	
	EXTRA PARTS	
No. 2.	Screw\$2.20 No. 3	3. 11-inch Locking Arm\$2.00
No. 2.		2. Two-Arm Beam 2.4)
No. 2.	10-inch Locking Arm 1.75 No. 1	2. Three-Arm Beam
No. 3.	Screw 2.50 No. 3	3. Two-Arm Beam 3.10
No. 3.	7-inch Locking Arm	3. Three-Arm Beam 4.40
	203 P. C.	

#### F. & W. UNIVERSAL WHEEL AND GEAR PULLERS.

The F. & W. Universal Wheel and Gear Puller is especially designed for use on Aeroplanes, Automobiles, Trucks, Tractor Electric Vehicles and Gas Engines. It will meet requirements for pulling any type of wheel, gear or pulley.



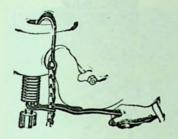


STARTER, CENERATOR AND
ALL ELECTRIC MOTOR AND
LIGHT GEAR WORK

F. & W. Universal No. 5. Starter, Generator, and all Elec-

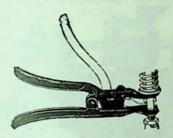
tric Motor and Light Gear Work. Price.....\$8.00

#### FLEXIBLE VALVE REMOVERS.



This reliable chain tool has proven to be the best motor valve tool. It is used with ease around pipes and fittings; the chain allows this; every link is an adjustment.

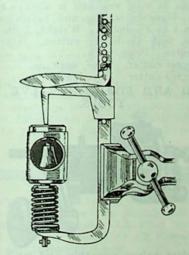
#### T. & L. VALVE SPRING REMOVERS.



For All Small Cars.

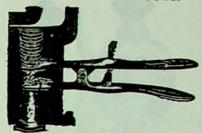
Easily and quickly adjusted. Requires no holding while pin is removed. It automatically locks itself when applied to the spring.

#### LARGE T. & L. VALVE LIFTERS.



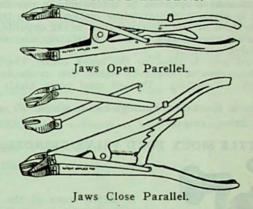
Made of the same material as the small lifter. Operates with the same cam action, with no springs or catches to get out of order.

#### GEMCO VALVE TOOLS.



Made of pressed steel, and so constructed as not to require holding after spring is compressed. Can be used on practically any motor.

#### K-D VALVE LIFTERS.



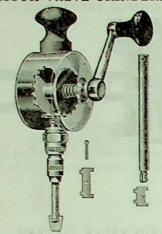
Jaws remain parallel through the entire lift. Two extra jaws of different size are furnished with each tool, all being interchangeable.

#### BUFFUM BUICK VALVE REMOVERS.



Removes the entire valve assembly without breaking the top guide from the valve cage, or bending the spring and stem. Applies the pressure directly underneath the cap washer and key; the pull is delivered straight up. Fits Buick motors of all models since 1912.

#### SIOUX VALVE GRINDERS.

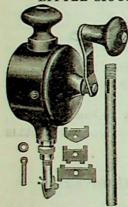


By continuous movement of the handle in one direction the valve is given a reciprocating motion, always traveling slightly forward in one direction then in the opposite, thereby producing the motion that is absolutely necessary for perfect valve grinding.

The hand grip is close to the crank center, thereby relieving the valve of the side strain that tends to cause irregularities in cutting. Pressed steel gears, nickle plated finish.

Easy action is attained through ball bearings. Wt., 4% lbs. No. 400. Price, complete ......5003 \$7.00

#### LITTLE SIOUX FORD VALVE GRINDERS.



A steady turn of the handle in one direction gives the valve a reciprocating or forward and backward movement, which is necessary for perfect valve grinding. Complete with 5 interchangeable driving points.

Wt., 21/2 lbs.

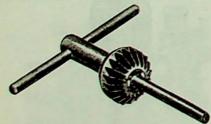
No. 401. Price, each .. 2506 \$3.50

#### COMPLETE "LITTLE SIOUX" TOOL SET.

This outfit will keep a Ford engine in smooth running shape. It contains the "Little Sioux" Valve Grinder, Ford Refacing Tool, Ford Valve Seat Reamer, a spring for jumping and a liberal supply of valve grinding compound. Weight, 41/2 lbs.

No. 402. Price, complete ......\$7.25

#### SIOUX FORD VALVE SEAT REAMERS.

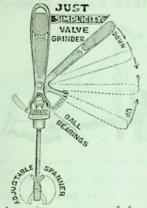


"T" Handle Type. Insures accurate reaming of valve seats and makes perfect fitting valves. Made with the same high-grade material and workmanship as our standard line of reamers.

HAND REAMER TYPE.

No. 201. Ford. Price, each.....\$1.75 253 P. C.

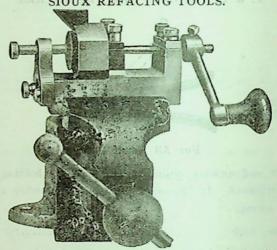
JUST SIMPLICITY VALVE GRINDERS.



Oscillating grinder with a range of from 1/8 to 13/8 turns. Save much time and labor by roughing in with full stroke of the handle, then finish up with 1/s, 1/4 or 1/2 stroke. The only speed grinder with which you can feel your work.

Always equipped for all valves; no plates to change, misplace or lose. Leave spanners loose for grinding the No. 4 cylinder of Ford cars. Simple, sturdy, flexible, 253 P. C. \$2.50 sensitive. Price, each ......

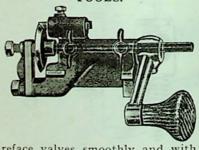
SIOUX REFACING TOOLS.



Removes all carbon pits and other irregularities from the valve face. The cutter is made of the very best Tungsten Steel, hardened and tempered to stand up under severest service. One cutter is furnished as regular equipment.

This tool locks in your vise and is always ready for use

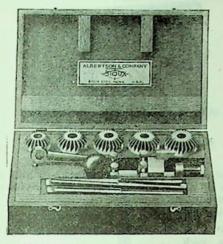
SIOUX FORD AND FORDSON VALVE REFACING TOOLS.



They will reface valves smoothly and with perfect accuracy. A few turns fit the valve perfectly into the valve

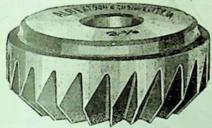
The cutters are made of high Tungsten steel the same as used for lathe tools. Weight, 1 lb. 254 P. C.

#### SIOUX VALVE TOOL SETS.



This set is a complete outfit for all valve refacing jobs. It includes (1) Sioux Valve Refacing Tool, (2) five Sioux Valve Seat Reamers, size, 15%-inch, 17%-inch, 2-inch, 21%-inch and 214-inch, all 45 degree. 30 and 60 degree and any other size from 1 to 4 inches in diameter can be obtained on request. (3) Three pilot stems, size 16-inch, 3/s-inch and 16-inch, finished to accurate size, insuring perfect measurements. Weight, 13 lbs.

### No. 300. Price, complete ......\$28.50 SIOUX VALVE SEAT REAMERS.



Refaces the valve seat perfectly. You can do all the heavy work of valve refitting with these seat reamers. Sizes and Prices.

No. 100.	11/2-inch .	\$3.50	No. 110.	27/s-inch	\$5.00
No. 101.	15/s-inch :	3.50	No. 111.	215-inch	5.25
No. 102.	13/4-inch .	3.50	No. 112.	3 -inch	5.75
No. 103.	1%-inch .	3.50	No. 113.	31/s-inch	6.00
No. 104.	2 -inch .	3.50	No. 114.	31/4-inch	6.25
No. 105.		3.75	No. 115.	33/s-inch	6.75
	21/4-inch .	3.75	No. 116.	31/2-inch	7.00
No. 107.	21/2-inch .	3.85	No. 117.	35/s-inch	7.50
No. 108.		4.25	No. 118.	3¾-inch	7.75
No. 109.	23/4-inch .	4.50	No. 119.	3%-inch	8.10
	No 1	150 4 inch	2	8 50	

Unless specified, all seater heads will be 45 degrees; 30 and 60 degree angles made special at the above prices.

For all sizes up to and including No. 107, 2½-inch. Reamer the Pilot Stem hole is f6-inch. For all sizes over 2½-inch, the standard Pilot Stem hole is 18-inch.

#### SIOUX PILOT STEMS.

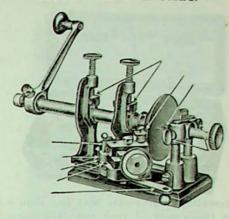


Accurately machined to fit perfectly. All Pilot Stems up to and including the size 16-inch will fit Reamers up to and including 2½-inch. All Pilot Stems over 16-inch up to and including 18-inch fit all Reamers over 2½-inch and up to and including 4-inch.

Sizes	and	Prices.

			na Prices.		
No. 120.	fa-inch	\$1.25	No. 125.	16-inch	1.25
No. 121.	3/s-inch	1.25	No. 126.	%-inch	2.00
No. 122.	32-inch	1.25	No. 127.	tt-inch	2.00
No. 123.	re-inch	1.25	No. 128.	%-inch	2.00
No. 124.	1/2-inch	1.25	No. 129.	18-inch	2.00
		. 253	P. C.		

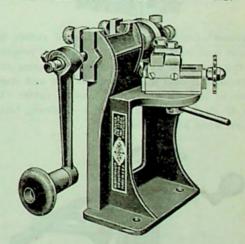
#### SIOUX VALVE LATHES.



Refaces valves of either 30, 45 or 60 degree angles. Angle adjustments built into the tool, a matter of moving the degree plunger. Round cutter leaves no ridges or uneven surfaces on the valve face. Self centering any valve from 13/s inches to 41/2 inches in diameter centers itself. Full equipment comes supplied with a small crank for small valves. Also all necessary springs for all sizes of valves. Can be fixed to a bench or held in a vise. Weight, 14 lbs.

No. 600.	Price,	complete
No. 601.	Extra	Cutters, each

#### LITTLE SIOUX VALVE LATHES.



For refacing valves of any size up to 21/2 inches. Tool is simple, self adjusting and accurate; cuts hardest steel valves. Circular cutter provides unlimited cutting edges. Leaves no edges. Graduation plate with the angles 30 degrees, 45 degrees, 60 degrees plainly etched on tool. Adjusted simply by loosening the clamp and moving adjustment lever. Tool holder adjustable in or out. Center adjustment for centering valves when refacing them has positive stop. When set for certain size valve, it will always be perfectly centered for the same size valve. Two clamp devices hold valve stem in perfect alignment.

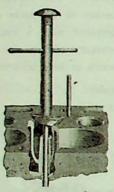
No. 700.	Price,	complete	\$12.50
No. 701.	Extra	Cutters,	each 1.50

254 P. C.

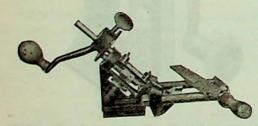
#### SKINNER MOTOR VALVE SETS.



Imagine reseating valve seats with less than 8 lbs. pressure—merely the weight of your arm—and doing it in less time than you ever did before. Note how we have separated power from pressure; your right hand turns the handle, left rests on pressure button so you feel DIRECT every spot in the seat. You know what you are doing.



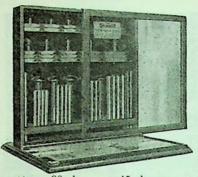
The "Skinner" bar type parallel bladed cutter, made of highest grade tool steel hardened by a special process. This has been the standard cutter in the engineering trade for 15 years, because it cuts many times as fast and stays sharp many times as long as any other type of cutter. Has flat as well as 45 degree cutting surfaces—a strong feature. A tool for hard work and lots of it.



The Refacer Valve is rotated against a moving file supported by two rollers, giving grinder speed and accuracy. You can actually cut a true face on a warped valve head—a valve so treated, being "set" as to warp, is superior to a new one. Refaces tungsten valves as well as soft iron. Special hard file furnished with tool. Set containing five cutters taking 11/8" to 31/8", four pilots, 16", 3", 16" and 1/2", Skinner Refacer, special file, emery paper and full directions.

Tun directions	
In leatheroid case.	Price\$25.00
Reseater separate,	packed in handsome hardwood case.
List price	\$15.00
The state of the s	complete with file, in strong carton.
List price	\$10.00
	List. Net

#### SKINNER MOTOR VALVE RESEATER PARTS.

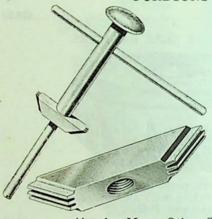


All sizes of cutters, 30 degrees, 45 degrees and 60 degrees, and various pilots. You can have an individual reseater made up for any car from this case.

Cutters, price, each\$2.00	)
Spindle, price, each	)
Pilots, price, each	5
Handle Bar, price, each	,
Use valve size in specifying cutters.	1

List Net.

# SKINNER RESEATERS FOR FORDS AND FORDSONS

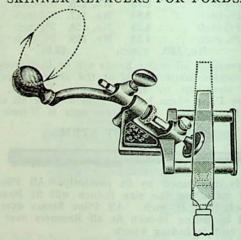


The same wonderful cutter as the big set, the same fine steel and accurate workmanship. For Fords, but equally satisfactory on many other small-valve cars. Cutter good for 300 to 500 jobs.

Also for Many Other Small Cars.

Price,	comple	te with	valve	grinder	 	 .2001	\$2.50
Price,	Extra	Cutters	s		 	 . 1503	1.50

#### SKINNER REFACERS FOR FORDS.

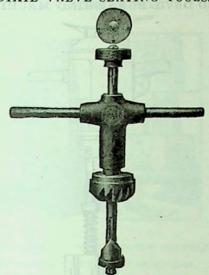


45 degrees only. Simply a small edition of the big Skinner Valve Refacer. Accurate, rapid, dependable—it pays for itself anywhere, and everyone repairing Fords should have one.

have one.	
Price, each	\$2.50
	, extra

List Net.

DIXIE VALVE SEATING TOOLS.

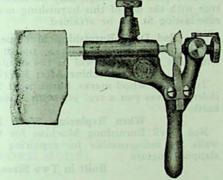


A tool for accurately reaming the valve seats in a motor block. Has Micrometer Adjustment which enables a mechanic to set off and cut the exact depth desired. Micrometer is graduated in thousandths and half-thousandths of an inch.

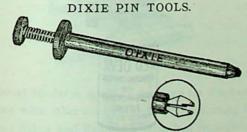
A standard reamer, Morse-taper, of 45 degrees is regularly furnished with the tool. Reamers of 30 and 60 degrees can be supplied at small cost. A sleeve lock at the bottom and the Micrometer feed screw at the top hold the tool firmly in place. It will not chatter the valve seat. Price, each ......\$7.50

#### DIXIE VALVE FACING TOOLS.

Cuts and faces valves and determines whether new valves are accurate. Micrometer Adjustment makes it possible to cut any desired amount from the valve face. Micrometer feature also allows a mechanic to calculate accurately the



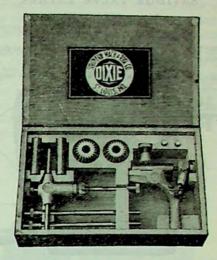
adjustment necessary on the cam end of a valve stem after a valve has been faced. By adding the amount cut from the valve face to the amount cut from the valve seat, you arrive at the necessary adjustment for setting the valve. Tool will also determine whether new valves are accurate before they are installed. Imperfect stems will not pass through the sleeve of the tool. Blades have standard 45degree angles. Blades with 30 and 60-degree angles can be supplied at small cost.



For removing and replacing cotter pins, taper pins, valve keys, and magneto, carburetor, and generator parts. Consists sists of tube and plunger. One end of plunger is milled so as to form four jaws; other end is fitted with knurled nut. Under pressure, jaws open 1/4". When pressure is released, Jaws contract and grip firmly. Price, each .....

257 P. C.

DIXIE VALVE TOOL SETS.



A combination of the Dixie Valve Facing Tool and the Dixie Valve Seating Tool. Contains in addition: 3 Facing Tool blades, with standard 45-degree

- angles.
- 3 Seating Tool reamers, 1%", 118", and 214" in
- diameter.
  3 Seating Tool pilot stems, %", \$1" and %" in

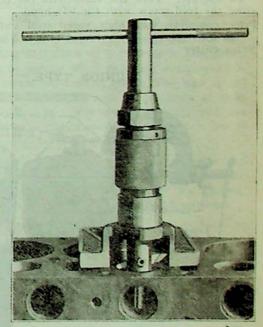
Reamers and blades have standard 45-degree angles. Set is packed in a strong wood case equipped with racks and grooves for each tool and part. Price, each .....

253 P. C.

#### DAVIS VALVE RESEATING AND BORING TOOLS.

The Davis tool is held to the cut by a perfect screw feed device, no digging in, no sliding over cut, no chatter, every seat a perfect job.

This tool will rebore the valve ports larger so a larger size may be used. On many motors this adds to the power and speed very materially as it gives quicker inlet and outlet to the cylinder charge.



The cutters are regular lathe tools made of best high

Provision is made for pilots centering in worn guide holes.

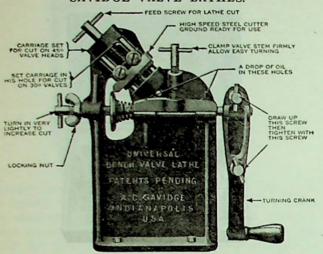
The complete set consists of: Three Boring Bars with 16, 35 and 16" pilots. Two Valve Seating Cutters, 45 degrees angle.

One Knurled Handle to turn cutters.

Two Boring Cutters.
One Wrench for hexagon set screw.
Buick Valve Cage Holder with bushing for the smaller

All inclosed in strong mahogany finished chest. Weight 18 lbs. net.

#### SAVIDGE VALVE LATHES.



Universal Type.

For Any Valves, Steel or Iron Heads.

Capacity—Valves with 45 or 30-degree heads up to 2½-inch diameter and 16-inch stems.

A simple, rugged, accurate, efficient and quick Lathe, with that real lathe action so necessary for valves with steel heads

Quicker and more accurate than a machine lathe, because self-centering, and its angles accurately fixed—no guess work.

True your old valves in spare minutes; eliminate waste.

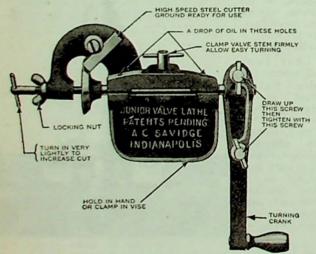
Assure a perfect concentric fit and save valve grinding.

Assure an easy starting and smooth-running engine.

Eliminate those ridges made by grinding, and produce a smooth, non-carbon-collecting surface—a lasting job.

To operate: Turn the valve with the crank while operating the feed screw with the left hand.

#### JUNIOR TYPE.



For "Ford" valves and other valves with 45-degree cast iron heads up to 13/4-inch and 1/8-inch stems.

It is light, compact, and cuts quickly and easily.

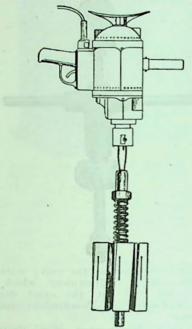
Easily clamped in vise or held in one hand when operated. It does not require a machinist to operate, and it takes the labor out of seating valves.

It should be in the tool box of every owner.

Ideal equipment for Ford repair shops. Does the work in a jiffy, quicker and easier than any other method.

Save time, annoyance and money and keep your engine fit by keeping your valves gas tight.

RED DEVIL BURNISHING MACHINES.



Self aligning power machine driven with electric drill.

Make it possible for the repair man to fit new over-size pistons to cylinders without removing engine from the car when the variations do not exceed five one-thousands of an inch.

Cylinders slightly tapered, out of round, or with shoulders worn by pistons or rings, may be made round, straight and true with the use of this burnishing machine. A very accurate lasting fit can be attained.

Use Red Devil Burnishing Machines After Reboring.
Will remove all tool marks, polish cylinder walls, and
longer life piston wear will be the result.

Use Machine After Regrinding.

To remove wheel marks, burnish off high spots left in cylinder, it gives you a real job with a smooth, true gun-barrel finish.

When Replacing Worn Pistons.

Red Devil Burnishing Machine for truing worn cylinder walls are indispensable for repairing oil pumping, piston slapping engines.

Built in Two Sizes.

No. 1 fits all cylinder bores, 213 to 31	4. Price\$15.00
No. 2 fits all cylinder bores, 31/4 to 41/2	/s. Price 15.00
Extra blades. Set of six blades	4.50
Extra universal joint	1.50
Extra tee handle	1.00

All machines are equipped with Red Devil universal joint, and fit standard half-inch drill chucks, unless tee handle is specified with order.

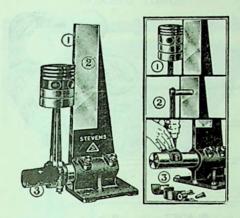
#### RED DEVIL BURNISHING COMPOUND.



Burnishing compound for fitting cast iron, aluminum, magnalite, lynite, steel and semi-steel; may be used freely, cleaned easily, and stops cutting when cylinder oil is applied.

List, Net.

# STEVENS UNIVERSAL PISTON ALIGNERS. UNIVERSAL MODEL.



This tool turns out the most accurate assembling job, because it checks up the alignment of every part. An engine assembled with Stevens Aligner will work right on the first tryout.

The machined surfaces No. 1 and No. 2 detect any bend or twist in the connecting rod, or any misalignment due to the wrist pin bearings.

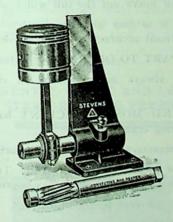
On the Arbor No. 3 is done the preliminary fitting of the connecting rod bearings in true line.

Arbors furnished for all cars. Combined Arbor and Reamer in any size supplied separately; price on request.

Universal	Model with	any size	Arbor	22.50
Extra Cas	e Hardened	Arbor, up	p to 23/8"	6.50

Combined Arbor-Reamer. Prices on this item furnished on request.

#### FORD MODEL.



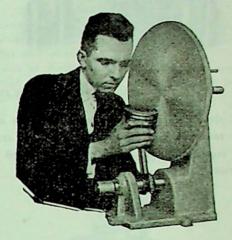
This Special Model is specially designed for Ford cars, but may be used with other cars having short connecting rods.

Combined Arbor and Reamer is furnished separately.

Ford Model with special Ford Arbor	9.50
With Combined Arbor and Reamer	15.00
Extra Case Hardened Arbor, any size	6.50

CONTINENTAL PISTON ALIGNING DEVICES.

The Continental Aligning Device tests for bent and twisted rods with or without the piston. In the testing of piston assemblies the lower rod bearing is clamped around the correct size bushing and placed on the standard arbor of the device. The disc is then moved out against the side of the piston and by looking between the piston and disc toward the light the assembly can be lined up correct. Pistons should always be measured with micrometers and the taper should be allowed when straightening. To test for twists the piston should be rocked on its pin.



A pin testing gauge is furnished with each machine, so that the rod may be tested without the piston where desired. While this test is not essential and will not assure you that the entire assembly is in line, yet many times it is desirable to check up and find if the incorrectness is in the rod or in the piston.

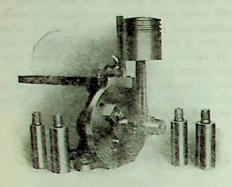
The Continental Aligning Device is strong and well built and the arbor being supported at both ends is held firmly so that it cannot be sprung when rods are straightened in the machine by means of bending bars. The disc is 16" in diameter, has a polished face and is absolutely at right angles with the arbor. It is a universal machine and can be used with all sizes of pistons and rods. All parts are of high grade material and accurately machined.

Each machine comes equipped with a standard arbor and one bushing. Unless otherwise specified, the 2" bushing will be furnished. Where additional bushings are desired, same should be ordered by diameter and model number.

> Shipping weight, 120 lbs. Model 32. Price, \$60.00.

	Bushing List. Size	
Model	Inch	Price
32- 7	11/4	\$2.40
32-8	13%	2.80
32- 9	11/2	3.00
32-10	1%	3.20
32-11	134	3.40
32-12	13%	3.60
32-13	2	3.80
32-14	21%	4.00
32-15	21/4	4.20
32-16	23/8	4.40
32-17	21/2	4.60
32-18	2 %	4.80
	List Net	

# UNIVERSAL CRANKSHAFT SUPPORT AND ALIGNING FIXTURES.



The right way to align pistons and connecting rods.

A perfect device for aligning connecting rods and supporting any make or size automobile, motor or crankshaft so that the connecting rod bearings can be fitted and the connecting rods and pistons tested for alignment.

Fitting the Connecting Rod Bearings.

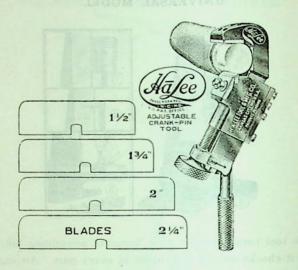


The Right Way.

The above cut illustrates Crankshaft clamped to the face of fixture, the other end of shaft being supported by the floor stand and shows mechanic fitting and tightening the connecting rod bearing. After the crankshaft is clamped to the fixture it requires no further handling.

Universal Crankshaft fixture complete with Stand and 1 Mandrell. Each	60 00
Extra Mandrels. Each	
B. & S. Combination Square Hardened Head and	
Blade. Each	3.90

#### HALEE CRANK PIN TOOLS.



The 1 to 2" tool will take care of the general run of cars from the Ford size to the Haynes, Buicks, Overlands, Essex, 7W Continental motor, Fordson tractor, etc.

The 2 to 3" tool will also take in as small as 1\%" shafts and is used on such cars as the Packard, White, Nash, Studebaker, Marmon, Olds 8, Cadillac, Peerless, Hudson and large trucks, tractors and stationary engines.

The HaLee Tool will remove the high spots or the largest diameter first, taking nothing off the small diameter, therefore not decreasing the size of the shaft below its smallest diameter.

For instance, on a shaft of 1¾" diameter, which is worn down .005 at the small diameter, the HaLee Tool will true up this pin to .005 under 1¾", so there is very little bearing work necessitated in refitting the connecting rods.

This tool trues up worn out or out of round crankshaft bearings, it removes as little or as much as desired to true up, removing the high spots first.

FOR USE UNDER CAR OR ON BENCH WORK and capable of light or heavy cut the full width of bearing.

The operation is so easy and simple that anybody can use it, getting utmost accuracy and fine finish.

ONLY ONE PART TO OPERATE—the feed screw.

Cutting blade always automatically on center at different diameters.

SIMPLEST AND MOST EFFICIENT hand tool ever designed for trueing crankshafts.

Five to ten minutes average time to bearing.

Blades made of special high grade Alloy Tool Steel and can be sharpened on oil stone or factory regrinding service.

Four blades of different lengths furnished.

Hardened steel back to resist wear.

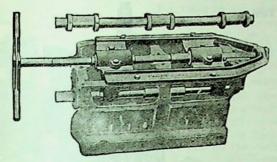
First few jobs pays initial cost.

For automobiles, trucks, tractors and stationary engines.

One to two-inch size. Price, each......\$40.00

List Net. .

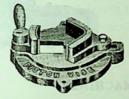
# (F)STORM MAIN BEARING BABBITTING AND BORING TOOLS.



For Ford Motors.

This tool makes a new, perfect bearing, exactly the same as the original and in the exact original position. The jig which holds both the babbitting arbor and the boring bar, is held in correct position and alignment by an aligning arbor passing through the cam shaft bearing holes. The babbitting arbor is 1/8-inch smaller than the crank shaft, allowing ample space for the pouring of the metal, and providing surplus metal to be cut away by the boring bar, which has four cutters for each bearing, and which insures a perfect, true, smooth and accurate bearing. The tool is very simple, and can be operated by anyone without previous experience, and will produce bearings equal to a factory job. The whole operation can be performed in less than thirty minutes. Pouring blocks are provided, though not shown in cut.

#### CONTINENTAL PISTON VISES.

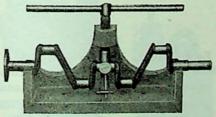


A universal quick-acting vise that will handle all types of pistons. Jaws are faced with leather, which gives a velvet grip that will hold any piston without marring it. Will handle pistons from 2% to 6" in diameter.

Price, each .....\$7.00

List Net.

# CONTINENTAL CRANK AND CAM SHAFT STRAIGHTENING PRESSES.



Handles crank and cam shafts of Ford, Overland 4 and Chevrolet 490 motors. Testing and straightening is done on V blocks. Press comes equipped with dial indicator. Shipping weight, 100 lbs.

Shipping weight, 100 lbs.	
Model 26. Price\$32	.50
Model 26-A. Straightening press without indicator. Price	
Model 26-B. Indicator. Price	
List Net.	

CONTINENTAL RIVETING JIGS.

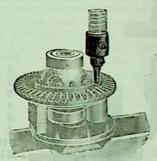


A convenient device for riveting new lining on Ford transmission bands. When put on with this jig the lining always fits and eliminates dragging.

May also be used for removing the old rivets. Is fur nished with a special clamp for locking the band around the mandrel. Shipping weight, 23 lbs.

List Net.

#### WEAVER RIVETING TOOLS.

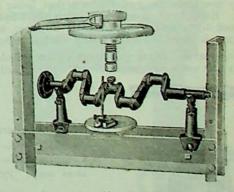


For Weaver Forcing Press.

Especially useful in riveting ring gears. The enormous pressure exerted by press on the tool insures tight fit of rivets, eliminating time and trouble of heating. Heading tool furnished will fit 3% and 3%" rivets. Designed to fit any Weaver press screw; securely fastened to press screw by means of a large set screw. Weight, 3 lbs.

Price, each ......\$4.50

#### WEAVER FORCING FIXTURES.



List Net.

(F) Goods marked (F) not carried in stock; shipment from factory.

#### (F) "YORK" CYLINDER BORING MACHINES.

A Portable Machine Tool.

Will rebore accurately all motor blocks passenger car, truck, tractor and marine within its capacity, 21/2" to 516".

Gear driven-Smooth cutting.

Two feeds-.020" and .050" per rev.

Easy gear shift.

Hand or power drive.

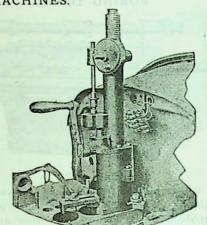
Threadless boring bar.

Bearing surface 18" long.

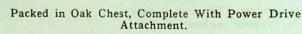
Sectional base permits accurate centering at any point in the cylinder; examining cut, taking a second cut, trying piston, etc., without disturbing centers originally found.

Boring bar and cutter head can be raised or lowered mechanically in the cylinder at will.

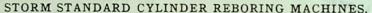
Cutter head has six non-chattering, selfcentering, self-piloting cutters.



Boring Motor in Chassis. Power Driven-Any electric drill 3/8" capacity and up or 1/4 h. p. motor will drive "THE YORK."



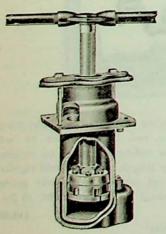
			EC.
No.	Range	Weight	Each
1	2½" to 5½"	150 lbs.	\$225.00
2	2½" to 3¾"	135 "	200.00
3	3 " to 41/4"	140 "	210.00
4	3¾" to 5½"	140 "	205.00
5	Dodge Special	140 "	190.00
6	Ford-Fordson	140 "	190.00
DH.	Holder for electric drill,	add	6.50
MB.	Individual motor bracket	, add	5.00
	Regrinding cutters, per s		
	7'37		
	List Net		The state of the s



This well known equipment has the great advantage of being adjustable and interchangeable, so that it can be furnished in varied capacities, as listed below, to meet varied requirements. It is low in first cost, is portable, and does not occupy valuable floor space, and does the work smoothly, accurately and quickly. It is self-centering by means of tapers, therefore quickly and easily aligned for the reboring operation,

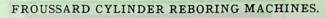
These machines are positive in action, being centered at both top and bottom, and are operated by means of threaded feed bar. Each head is provided with six Duplex spiral cutters, which do the cutting on an improved principle. They are all adjusted by a single center cutter adjuster, and can be locked to any desired size. The ingenious removable lower central bearing is provided with cutter outlets, effectively disposing of cuttings.

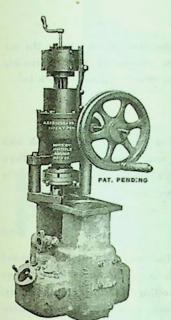
One operation rebores and finishes each cylinder, saving time, and reboring all cylinders of a motor or a number of motors to exactly the same oversize without separate adjustments for each.



- No. 312F. Standard Machine for Chevrolet, Ford, Dodge, Fordson and other similar size cylinders; a popular machine for those who confine their effort to these sizes. Comprises No. 312 Standard Machine equipped for the 311, 334, 338 and 4-inch
- No. 312. Standard Machine for Medium Sizes (Adjusts from 316 up to 5 inches). Takes care of medium sizes, and meets the requirements of many shops. Standard List Net.

(F) Goods marked (F) not carried in stock; shipment from factory.





Shows Machine on a Pack Block.

For reboring any and all kinds of cylinders, whether horizontal or perpendicular, including automobiles, air compressors, ammonia compressors, steam, gasoline and oil engines. A profitable investment for every machine shop and power plant, not only for reboring cylinders, but for reseating safety valves, throttle valves, safety heads, pump valves, reboring fly wheels, rolls, pulleys, Corliss engine valve parts, poppett valves on uniflow engines, crank pin holes, valve chambers on steam engine bearings.

Gives a straight, smooth cylinder.

The cut shows a hand attachment which in a moment's time can be changed to belt drive from line shaft, individual motor or otherwise, as desired.

Where motor is desired, we mount same and an extra charge will be made for the motor, all depending on the current used, voltage, etc. The size of the motor required will be from 1/6 H. P. to 1/4 H. P., and we furnish Emerson Motors unless otherwise specified.

For automobile work the smaller motor is sufficient, but for machine shop work on large cylinders, big engine work, etc., a larger motor will be required.

Can furnish larger bars for portable use in power plants, machine shops, etc., to suit any work they may desire to accomplish.

The Cutter Head is new and novel and the 4 cutters in each Head all adjust either inwardly or outwardly as one unit and they are always in alignment, and with the aid of the graduation marks a very fine and accurate adjustment can be obtained.

There is no wear on the Bar, for the reason that it travels with two large coneshaped bearings, one above the worm and wheel drive and the other below; therefore, if there is any wear it is on these large bearings, and this wear is taken up with the aid of adjusting nuts for that purpose. In this way the machine is continually accurate, no matter how long used.

The Bar is merely a sliding fit, .001 allowance for sliding, and the Cutter Head is also a sliding fit and feeds down automatically over the bar and over a square thread feed screw.

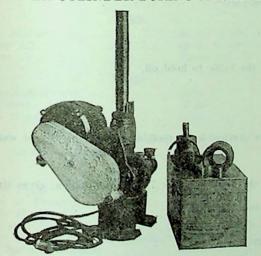
A very fine feed, or as much coarser as desired, can be taken merely by changing different size gears which we provide and which can be changed in a moment's time.

The Centering Device is very simple, absolutely true, and enables the operator to center the bar quickly and accurately. Machine with Centering Device, without Cutter Head, including 134" Bar 26" long:

Machine with Centering Device, without Cutter Head, including 1/4	5at 20 long.	
With automatic feed. Each, cash price	\$175.00	
Time price		
1 Cutter Head with range of expansion from 23/4 to 31/4"		
1 Cutter Head with range of expansion from 31/4" to 33/4"		
1 Cutter Head with range of expansion from 3\%" to 4\%"		
1 Cutter Head with range of expansion from 41/4" to 5"	50.00	
Longer Bars and larger Cutter Heads furnished on request.		
Mounting Plate for Motor, extra	7.50	
Round Endless Leather Belt (extra)		
Motor extra		

List Net.

#### WONDER CYLINDER BORING MACHINES.



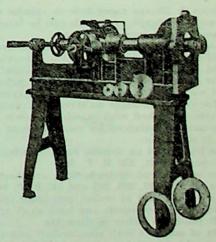
A power cylinder reboring machine, operated by the light current, that frequently can be used without removing block from auto.

This machine has a range of work from 236" to 318" in diameter. This covers over 150 makes of cars. We can furnish extra head for boring tractors up to 41/2" bore.

Price, each .....\$215.00

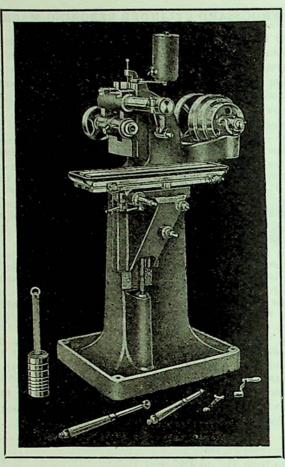
List Net.

#### MARVEL CYLINDER REBORING MACHINES.



Boring Bar; full length, 37½ inches; diameter, 2½ inches. Boring length, 15 inches. Automatic feed. Length of feed screw, 24 inches. Number of threads per inch, 32. Width of face plate, 11 inches; length, 15½ inches; thickness, 1½ inches. Diameter of pulley, 7½ inches; face of pulleys, 1½ inches. Weight, 580 pounds.

FNo. 1 U.S. **Improved** Hand and Weight Feed Milling Machines



The illustration shows the machine equipped with three-step cone, which takes 134-inch belt.

If desired we will furnish with two-step cone and side pulleys, which take 21/2-inch belt for heavy work.

Machine is regularly furnished with countershaft having one self-oiling friction clutch pulley, oil pot, two feed handles, necessary wrenches and weights and two micrometer dials, one for cross feed and one for vertical feed.

The vertical and horizontal feeds are independent and permit the work to be held close to the table, thereby enabling the machine to be used as a profiler. The vertical lever feed being independent from the table and the head accurately counterbalanced, light milling work can be done on long or heavy pieces without danger of breaking the cutters. The hand lever feed can be operated on either side of the table to suit the convenience of the operator.

The elevating screw on the knee is fitted with ball thrust bearings, reducing the friction in raising or lowering the knee to a minimum. Any number of spindle speeds are possible by making various diameter driving pulleys.

The table is operated by hand lever feed, also crank feed with rack and pinion. The pinion shaft is mounted in eccentric bushing to allow for adjustment of pinion with rack. A weight attachment is furnished so that head and table can be fed automatically. Adjustable stops are provided for both table and head, limiting the travel in either direction.

#### General Specifications.

No. 9 Brown & Sharpe taper hole in spindle regularly furnished.

No. 10 Brown & Sharpe taper hole can be furnished extra.

Spindle runs in solid bronze bearing. Working surface of the table 65 x23 inches over all.

An unusual depth and width of pocket is provided around the inside of the table to hold oil.

Adjustment of table under spindle, 15% inches.

Adjustment of table in line with spindle, 5 inches.

Table feed with hand lever, 6 inches; with crank, 16 inches.

Top of table can be brought on level with center of spindle. Top of Table furnished with standard %-inch T Slot.

Head is accurately balanced by counterweight inside of column and has vertical lever feed, and with the use of weight provided is automatic.

Adjustable lever feed on spindle head, 4 inches.

Speed of countershaft, 230 R. P. M.

Pulleys on spindle end of back shaft are interchangeable, which, with three grade cones, 7, 8½ and 10-inch, gives six spindle speeds, 96, 138, 197, 268, 383 and 547 R. P. M.

Two grade cone, 7 and 10 inches, gives four spindle speeds, 96, 197, 258 and 547 R. P. M.

Cone pulleys on countershaft and back shaft are of the same size.

Back shaft pulley, 6 inches in diameter.

Net weight of machine with countershaft and all regular equipment, 1,000 lbs.

Shipping weight, boxed for export, 1,150 lbs.

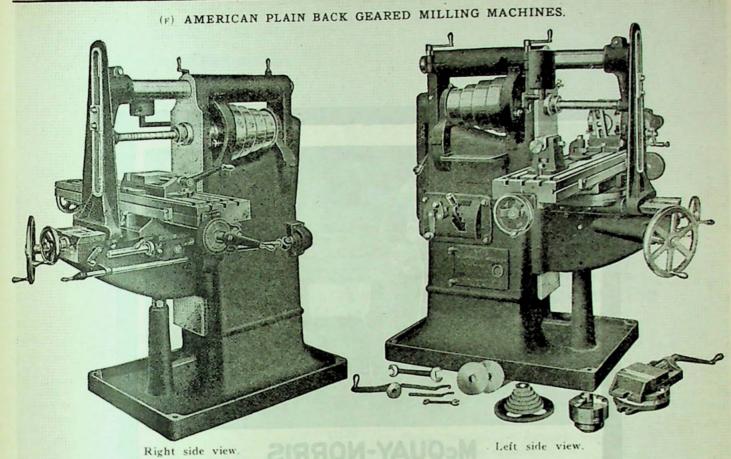
Cubic measurement, 38 feet.

Size of foot of base, 23x26 inches.

Floor space required, 27x37 inches.

When arranged for motor drive a 2 h. p. 1200 R. P. M. motor is required. Two speed friction countershaft can be furnished if desired at extra price.

Write for prices.



Plenty of metal is provided to take care of all strains, the bearings are wide, all alignments are exceedingly accurate. adjustments are simple, an adequate oiling system is provided, insuring ample lubrication, and this miller will prove a thoroughly dependable manufacturing tool.

This miller is regularly equipped with power cross feed as well as power longitudinal feed, all steel gears are heat treated, all running shafts are ground, and bearings brouze bushed. All operating levers with the exception of those on the feed box are on the front of the machine, most convenient to the operator.

#### Equipment.

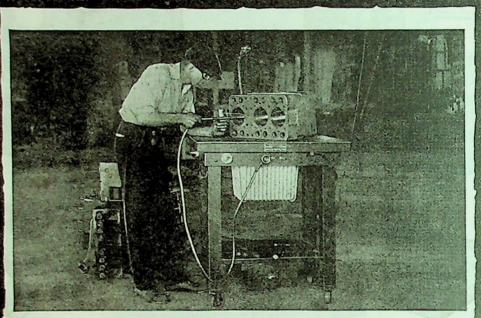
The machine is regularly furnished with two-speed friction countershaft, oil pot, necessary wrenches, overarm bracket and brace, one-inch arbor with collars, micrometer dials, table stops, swivel vise, 11-inch universal dividing head with center rest, three index plates, 6-inch three-jaw universal chuck, spiral milling attachment with change gears and index chart. chart.

Automatic oil pump with attachments and special arbors can be furnished extra.

#### GENERAL SPECIFICATIONS.

Table.   Working Surface	Furnished with Machine Complete with Collars  1 in. x 10 in.  Cone and Back Gears.  4-Step Cone, Largest Diameter
Spindle.  Length of Front Bearing	Countershaft.  Speeds
Size of Taper Hole	Vise.
Diameter of Hole through Spindle	Opens         4 in.           Jaws         1½ in. x 6¼ in.           Floor Space Required         85 in. x 64 in.           Net Weight         3,000 Lbs.           Crated for Domestic Shipment         3,250 Lbs.           Size of Case         118 Cubic Feet.
Write for	Prices.

<sup>(</sup>F) Goods marked (F) not carried in stock; shipment from factory.



# McQUAY-NORRIS WAINWRIGHT SCORE FILLING MACHINE

The Wainwright Score Filling Machine melts and deposits in cylinder scores or water jacket cracks a metal filling which amalgamates with the original structure and becomes a part of it. It is designed and manufactured to fill scores in cylinder blocks and repair water jacket cracks. It is not a welding machine for joining broken or cracked parts on which there is a breaking or torsion strain, such as frames, for instance.

The machine is a combination of electrical resistances and windings housed in a heavy, substantial cabinet and mounted on casters so that it can be used in any part of the shop where electrical connection is available. It is 39" high and 24" wide by 36" long. It can be used only

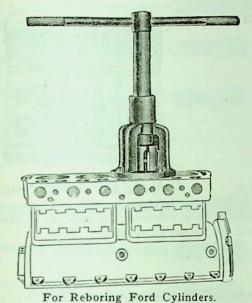
where alternating current is available. It is not made for use with direct current.

The machine operates by electrically depositing special non-oxidizing metal into either the scores or cracks. There are no connection joints after the operation is complete; it is a perfect union of metal to metal. It is necessary, however, that scored cylinders which have been repaired in this way be reground afterward. This is necessary because it is impossible to fill a score completely without the filling material building up higher than the surface of the cylinder bore. The regrinding operation removes it at the same time the cylinder is being brought to the desired over-size.

Price \$350



#### DAVIS CYLINDER REBORING JIGS AND REAMERS.



Pistons al2-inch oversize, Davis outfit rebores to fit these pistons, and makes the motor better than new.

The tool centers itself, and an inexperienced man can do as good a job as an expert machinist.

Reamer is adjustable for size. Weight, net, 45 pounds. Blades can be set and reground when worn, at small expense.

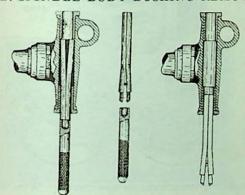
#### (F) HEISERS CYLINDER REBORING MACHINES.



For Ford Engines.

Indispensable in Machine Shop and Garage.

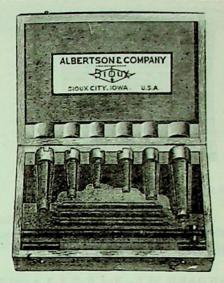
#### J. & B. SPINDLE BODY BUSHING REMOVERS.



Parker Rust-Proof Finish.

Made of nickel steel. Made particularly for removing the bushings from the spindle body of a Ford, Dodge, Overland, Chevrolet, Saxon, and all cars using a one-half inch spindle bolt.

#### THE SIOUX BUSHING REMOVERS.



Its action is simple. You serew it into the bushing in which it cuts its own threads. This gives you the grip on the bushing; then you drive it out from the back.

The No. 20 "Sioux" Bushing Remover is to remove blind bushings—those which cannot be driven out from the back. This you screw into the bushing; then you screw a center piece through the No. 20 "Sioux" Bushing Remover, and keep screwing the center piece, with jackscrew effect, until the bushing is removed. Weight, 6¼ lbs.

"Sioux" Standard Set Removes Bushings:

No. 1.	%-inch	to	i's-inch.				 	 	 	\$ 2.25
No. 2.	1/2-inch	to	16-inch				 	 	 	 2.50
No. 3.	%-inch	to	11-inch				 	 	 	 2.75
No. 4.	33-inch	to	18-inch				 	 	 	 3.00
No. 5.	%-inch	to	1 16-inc	h			 	 	 	 3.25
No. 20.	Blind	or	pocket	bush	ing	s	 	 	 	 5.00
No. 50.	Price	of	Set Con	nplet	e		 	 	 	 18.00
No. 20.	Blind	or	pocket	bush	ing	s	 	 	 	 5.00

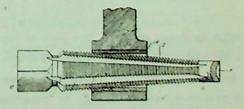
"Sioux" Ford Set. The Ford Set consists of numbers 2, 3, 4 and 5 from the "Sioux" Standard Set.

Weight, 41/4 lbs.

FORD SPINDLE BUSHING REMOVERS.

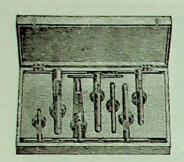


#### RELIABLE BUSHING REMOVERS.



A handy tool for use in removing worn bronze bushings when it becomes necessary to replace them with new ones. Turn it into bushing as if you were cutting thread; when teeth are firmly set place a punch or piece of iron against small end of bushing and drive it with a hammer. Will relieve bushings from 12" to 1" inclusive.

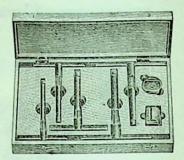
#### HOLLY BUSHING EXTRACTORS.



Standard Set, in Box. Nos. 0, 1, 2, 3, 4 and 34-B Tools.



Style of Tools. Nos. 0, 1, 2, 3 and 4.

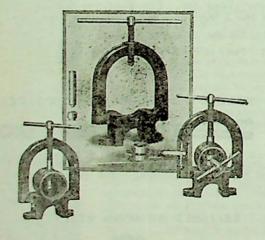


Special Ford Set. Nos. 1, 2, 3, 4 and 79 Tools.

While these tools may be had as individuals, we strongly recommend for Shop Efficiency the purchase of Holly Bushing Extractors in Sets. There is no additional charge for the case, when tools are purchased as sets.

	List
	Price
HE STANDARD SET-Nos. 0, 1, 2, 3, 4 and 34-B Tools	
HE SPECIAL FORD SET-Nos. 1, 2, 3, 4 and 79 Tools, extracts all bushings in Ford cars and trucks	
o. 0 Tool extracts rocker arm bushings, water pump bushings, commutator shaft bushings and all others raise from % inch to 1 inch, inclusive	2.50
o. 1. Tool extracts ten bushings in the Ford, also a large number in other standard makes of cars; any bushing in size from ½ inch to ¼ inch, inclusive	ranging 3.00
o. 2 Tool extracts bushings from 1/8 inch to 1/8 inch, inclusive	3.50
o. 3 Tool extracts bushings from ## inch to 1# inch, inclusive	4.00
o. 4 Tool extracts bushings from 1/8 inch to 1/8 inch, inclusive	4.50
o. 34-B Tool is a combination tool consisting of a taper sleeve or spool working on a threaded pin or spindle purpose of extracting pocket or dead-end bushings ranging in size from ¾ inch to 1½ inch, inside diameter.	e for the
o. 79 Tool, consisting of taper spools Nos. 7 and 9 and one spindle, extracts bushings from 176 to 276 inch, inc	clusive 10.00
206 P. C.	

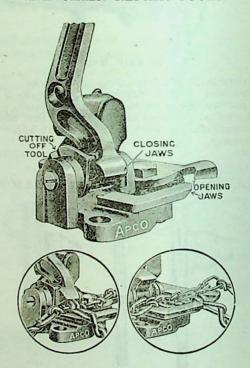
#### STEVENS PISTON PIN BUSHING PRESSES.



To replace bushings on Ford and cars of similar bore. Old bushings easily forced out and the new ones inserted, without burring, in true line, taking but a few minutes. Piston is protected against damage or distortion, by the feature, consisting of a split expanding block and tapered screw. Can also be used to remove tight wrist pins.

No. T-118. Price, each.....\$20.00

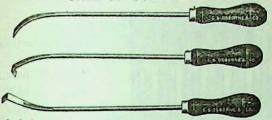
#### TIRE CHAIN REPAIR TOOLS.



203 P. C.

List, Net.

#### CARBON SCRAPERS.



Intended for cleaning soot from the top of a piston without taking off the head of the cylinder.

Made of ¼-inch crucible steel. Hand forged. Fastened into applewood handle.

No. 55. Price, per set of three Scrapers........501 \$0.75

#### BEARING SCRAPERS.



#### THREE-SQUARE SCRAPERS.



#### No. 29.

#### HOLLOW-GROUND SCRAPING TOOLS.

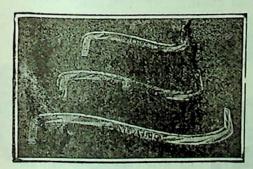


For scraping Metal Bearings and Oil Grooves. There are six Scraping Toops in set. Scrapers are made of best Tool Steel, tempered and hollow ground.

In oak cases, with metal form for holding each Tool in place.

Set No. 22. From 6 to 10 in. in length. Each. 3507 \$4.75 Set No. 2. From 8 to 14 in. in length. Each. 4409 6.00

#### OFFSET SCREW DRIVERS



#### No. 48.

#### COLD CHISELS.



#### Reliable Brand.

Size Steel	Length.		Price.
1/4-inch	41/2 inches.	Per dozen	\$1.56
ra-inch	5 inches.	Per dozen	1.68
3/8-inch	51/2 inches.	Per dozen	1.92
1/2-inch	6 inches.	Per dozen	2.76
%-inch	$\dots$ 6½ inches.	Per dozen	3.60
	7 inches.	Per dozen	
		Per dozen	
1-inch		Per dozen	9.60
		251 P. C.	

#### CAPE CHISELS.



Size.	Edge.	Length.		
%-inch.	¼-inch.	5½ inches.	Each201	\$0.20
1/2-inch.	%-inch.	6 inches.	Each243	.30
%-inch.	3/s-inch	61/2 inches.	Each306	.35

#### OIL GROOVE CHISELS.



Diameter, 1/2-inch. Length, 6 inches. Each.....254 \$0.60

#### MACHINISTS' HAND PUNCHES.



Diameter, ½-inch. Length, 6 inches. Diameter point

#### KNURLED PIN PUNCHES.

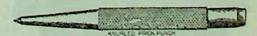


#### SICKLE SECTION PUNCHES.



Diameter, 1/4-inch. Length, 6 inches. Diameter point,

#### KNURLED PRICK PUNCHES.



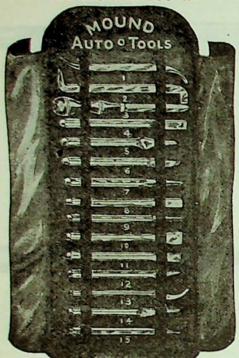
Diameter, %-inch. Length, 41/4 inches. Each .....223 \$0.30

#### COTTER PIN EXTRACTORS.



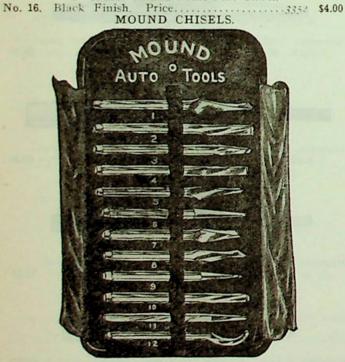
Made of fd-inch Square Steel. Used for extracting Cotter Pins and spreading the split ends to prevent them from coming out. 6-inch. Black Finish.

CHISELS AND TOOLS.



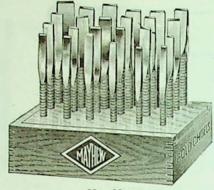
Set No. 16.

	Consists o	1 15 1	ools.
I-Cotter	Pin Extractor.	1 - 10	Round Nose Chisel
1—Offset	Screwdriver.	1 3/8	Solid Punch.
1—Three	Square Scraper.	1-3%	Metal Chisel.
1-1/2-inch	Flat Chisel.	1-16	Half Cape.
1-1/2-inch	Diamond Point.	1-10	Flat Drift.
1-1/2-inch	Cape Chisel.	1-1/4	Square Punch.
1-%-inch	Center Punch.	1-1/4	Bent Grooving Chisel.
	1- a-inch Round	Point	Flat Chisel.



N	0. 12.
Conveniently arranged in	finished canvas roll, and every
tool is highly polished and gr	naranteed. The set consists of:
1-11/2-inch Cape Chisel.	1 1/4-inch Square Punch.
1-11/2-inch Flat Chisel.	I di-inch Round Nose.
1-11/2-inch Diamond Point	1-6-inch Flat Drift.
1- &-inch Half Cape.	1 - fe-inch Round Flat.
1-fe-inch Center Punch,	1-Bent Grooving Chisel.
1-%-inch Solid Punch.	1-3/s-inch Sheet Metal Chisel.
No. 12. Set of 12 Polished	Chisels in Canvas Roll.
Each	

#### MAYHEW CHISEL ASSORTMENTS.



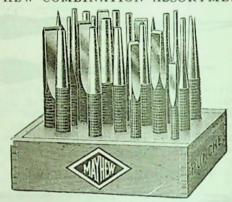
All regular taper, as follows:

Three 1/4-inch. Four 15-inch Five 3/s-inch. Six 1/2-inch. 5/s-inch Five One 3/4-inch

No. 38.

No. 38 Assortment. Price, each......\$9.20

#### MAYHEW COMBINATION ASSORTMENTS.



Every blow of the hammer refines the steel. Combination assortment illustrated contains both chisels and punches as follows:

	Punches.		
No. 490.	Solid 4/32-inch	1	only
	5/32-inch	1	only
	6/32-inch	2	only
August 1	8/32-inch	1	only
No. 491.	Center13/32-inch	1	only
	½-inch	1	only
No. 492.	Prick	1	only
	½-inch	1	only
No. 493.	Pin 4/32-inch	2	only
	5/32-inch	1	only
	6/32-inch	3	only
	8/32-inch	2	only
		17	
	Chisels.		

					11
			Chise	ls.	
No.	30.	Cold Chisel.		¼-inch	 1 only
No.	31.	Cold Chisel.		å-inch	 1 only
No.	32.	Cold Chisel		3/s-inch	 2 only
No.	33.	Cold Chisel		1/2-inch	2 only
No.	34.	Cold Chisel		%-inch	 1 only
			226 P	C	
No.	430	Assortment.	Price, eac	h	 \$7.25

#### IMPROVED AUTOMOBILE TOOLS.



The above cut represents the set of 20 Tools made up for use in Auto Repair Work. Strictly high grade Tools. Conveniently arranged in finished oak case, and every Tool highly polished and guaranteed. Set con-

sists of:	
2 Cape Chisels.	1 Oil Groove Scrap-
3 Cold Chisels.	ing Tool.
1 Diamond Point	1 Square Punch.
Chisel.	2 Rivet Punches.
1 Rd. Nose Cape	1 Nail Set.
Chisel.	1 Prick Punch.
1 Half Cape Chisel.	1 Center Punch.
1 Sheet Metal Punch.	1 Drift.
1 Scribe.	1 Round Point Flat
1 Bent Grooving	Chisel.
Chisel.	

No. 1.	Set of 20 Tools, Po	lished. Per	set	\$5.00
No. 3.	Set of 20 Tools Bla	ck Rinich	Per set . 280	4.00

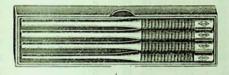
No. 494.

#### 

#### MAYHEW PIN PUNCHES.



No. 493.



No. 596.

Hand forged electrically welded extra long pin punches.

Made of 1/2-inch special steel, in four sizes. Points 1/3-inch,
1/4-inch, 1/3-inch, 1/3-inch; 9 inches long. Weight per set,
1 pound, 6 ounces.

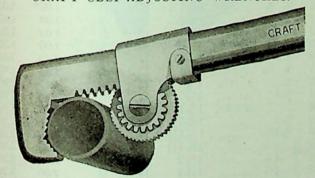
No. 596 Assortment. Price, each......\$1.60



#### No. 593.

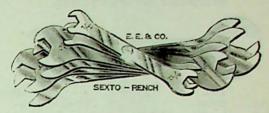
Made in four sizes: 36-inch, ¼-inch, 56-inch, 36-inch; 1/2-inch special steel; 9 inches long.

#### CRAFT SELF-ADJUSTING WRENCHES.



Durable. Self-adjusting. Rapid working. Does not slip. Will not gall. Strong in every part. Cannot work wrong. Size 24-inch; capacity, ½ to 2½-inch. Price, each......\$6.00 503 P. C.

#### SEXTO WRENCH SETS.

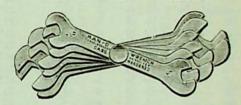


Made of steel, in-inch thick.

Consists of six double end wrenches, highly polished and nickel-plated. The smallest wrench is  $2\frac{1}{2}$  inches long; the largest wrench is  $4\frac{1}{2}$  inches long.

Sizes of openings: 32-inch, 32-inch, 31-inch, 31-inch, 32-inch, 32

#### HAN-D WRENCH SETS.

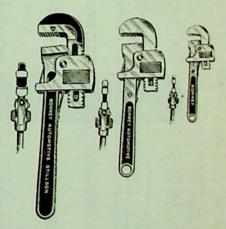


Stamped from 1/4-inch thick steel, strong enough for every ordinary requirement. Largest wrench 7 inches long over all; smallest 51/4 inches long over all.

Weight, complete set, 15 ounces. Nickel-plated finish, case hardened.

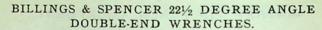
Price, per set......853 \$1.50

#### BONNEY MOTOR STILLSON WRENCHES.



Ideal Tools for the Kit or Around the Garage.

BILLINGS & SPENCER 15 DEGREE ANGLE DOUBLE-END WRENCHES.







		Hex.				—Pri	ice
	U.S.S.	Head			Thick-	Semi-	CC
	Bolt	Cap Sc.	Milled		ness of	Fin-	Fin-
No. 1110.	Size.	Size.	Opening	Lgth.	Head.	s 0.16	ished. \$ 0.23
1100		1/8- 16	\$ 3/8	4	1/4	.17	.26
1101	1/8- 1/8		Pe- 11	4	1/4	.17	.26*
1102 1103	1/8- 1/4	1/8- 1/4	16- 16 16- 1/2	4 41/2	1/4 3/2	.17	.26 .32*
1104	78. 74	18- 1/4	%- 16	41/2		.21*	.32*
1105		16- 16	3/8- 1/2	41/2	32	.21*	.32*
1106 1107	18- 1/4	18 · 3/8	3/8- 1/6 13- 1/2	41/2		.21*	.32*
1108	16- 16		\$8- 1/2 \$8- \$8	4½ 5	32 16	.21 .25	.32*
1109		1/4- 16	16. 1/2	5	16	.25*	.38**
1110		1/4 - 3/8	16- 16	5	16	.25*	.38*
1111	1/4- 1/6	ne- 3%	1/2- 16 1/2- 18	5 5	16 5	.25*	.38*
1113		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	1/2- 5/4	5	16 16	.25*	.38*
1114	14. 3/8		1/2- 18 1/2- 3/4	6	32	.31*	.46*
1115 1116		16- 1/2 3/8- 1/6	1/2- 3/4	6	32	.31*	.46*
1117		3/8- 1/2	16- 78	6	32	.31* .31*	.46* .46*
1118	16- 3/s		32- 11	6	31	.31	.46*
-1119	18- 16		32- 35	63/4	3/8	.37	.56*
1120 1121		16- 1/2 16- 16	%- ¾ %- ⅓	63/4	3/s 3/s	.37* .37*	.56* .56*
1122		16- %	5/8- 7/8	63/4	3/8	.37*	.56*
1123	3/8- 16		11. 65	63/4	3/8	.37	.55*
1124 1125	3/8- 3/2	1/2- 16	11- 7/s 34- 11	8	16	.45*	.68*
1126		1/2- 5/8	3/4- 7/8	8	176	.45* .45*	.68* .68*
1127		1/2- 5/8 1/2- 3/4	3/4-1	8	16	.45	.68
1128	76- 1/2 76- 16		35- 7/8	8	16	.45	.68*
1129 1130	16- 16	% · %	\$5- \$1 18- %	9	15 15 15	.55 .55*	.85* .85*
1131		16- 3/4	18-1	9	32	.55*	.85*
1132	1/2- 16		7/8- 81	9	35	.55	.85*
1133 1134	1/2- 9/8	%- ¾ %- %	7/s-1 7/s-1 1/s	9	35	55*	.85*
1135	/2" /8	5/6- 7/6	7/s-11/s	10 10	12	.6S .6S*	1.03* 1.08*
1136	16- %		32-175	10	32	.68	1.08*
1137 1138	76- 3/4	2/ 2/	31-11/4	111/2	33	.96	1.40*
1139		3/4- 7/8 3/4-1	1 -11/8	111/2	12 12	.96* .96*	1.40* 1.40*
1140	5/8- 3/4		1 10-11/4	111/2		.96	1.40*
1141	%- %		116-176	131/2	13	1.40	1.90*
1142		7/s-1 7/s-11/s	11/s-11/4 11/s-11/8	13½ 13½		1.40	1.90
1144			11/8-11/8	131/2		1.40 1.40	1.90 1.90
1145		1 -11/8	11/4-11/8	131/2	11	1.40	1.90
1146			11/4-1 ra	131/2	17	1.40	1.90*
1147 1148	3/4-1	1 -11/4	11/4-11/2 11/4-15/8	$\frac{13\frac{1}{2}}{16}$	16	1.40	1.90
1149		11/4-11/4	13/8-11/2	16	13	1.90	2.60 2.60
1150	%-1		116-1%	16	13	1.90	2.60
1151 1152	7/8-11/8 1	11/4	176-118	18	15	2.65	3.50
1153	1 -11/8	174	1½-1% 1%-118	18 18	18	2.65 2.65	3.50 3.50
1154	1 -11/4		1%-2	21	114	3.60	4.70
1155	11/8-11/4		1 18-2	21	110	3.60	4.70
1156 1157	11/4-13/4 11/4-13/8		1 12-2 na 2 -2 na	23 23	11/s 11/s	5.25	6.70
1158	134-11/2		2 -2%	24	178	5.25 7.00	6.70 8.80
1159	1%-11/2		2 18-2%	24	1 %	7.00	8.80
1160	13/8-15/8		216-216	26	11/4	9.00	11.25
1161 1162	11/2-1% 11/2-13/4		23/8-23/4 23/8-23/4	26 27	11/4 13/8	9.90	12.40
1163			276-23/4	27	13/8	11 00 12 00	13.65 15.00
1164			23/4-31/8	32	11/2	15.50	19.00
1165 1166			23/4-31/2	34	11/2	20.00	24.00
1100		rdering sp	31/8-31/2	36	Model	23.50	28.50
	ii hen o	dering sp	echy Nu	mber,	Model	and Fini	sn.

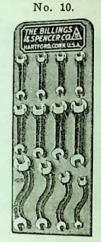
		Hex.				——Pr	ice
	U.S.S.	Head			Thick-	Semi-	
	Bolt		Milled	_	ness of	Fin-	Fin-
No.		Size.	Opening			ished.	
1400			7g- 3/8	4	372	\$ 0.22*	
1401	1/s- 18		16- 32	4	3/2	.22	.32
1402		1/8- 1/4	16- 16	4	32	.22*	.32*
1403	1/s- 1/4		16- 1/2	4	372	.22	.32
1404		16- 1/4	3/8- 175	4	372	.22*	.32°
1405		16- 16	3/8- 1/2	4	372	.22*	.32*
1406	3 1/	16- 3/s	3/8- 18	4	372	.22	.32
1407	16- 1/4		32- 1/2	4	32	.22	.32
1408	18- 18	1/ 5	33- 32	5	16	.29	.42
1409		1/4- 16	76- 1/2	5	136	.29*	
1410		1/4 - 3/8	78- 76	5	16	.29*	.42*
1411	1/ 5	15- 3/s	1/2- 16	5	16	.29*	.42*
1412	1/4- 16	5 7	1/2- 32	5	16	.29*	.42*
1413	1/ 3/	16- 16	1/2- 5/8	5	16	.29*	.42*
1414	1/4- 3/8		1/2- 11	5	16	.29*	.42*
1415		16- ½	1/2- 3/4	5	16	.29	.42
1416		3/8- 170	18- 1/8	61/4	3/8	.39*	.56*
1417	5 2/	3/8- 1/2	16- 3/4	61/4	3/8	.39*	.56*
1418	fe- 3/s		32- 11	61/4	3/8	.39*	.56*
1419	16- 16		38- 35	61/4	3/8	.39*	.56*
1420	• • • • • • • • • • • • • • • • • • • •	76- 1/2	5/8- 3/4	61/4	3/8	.39*	.56*
1421		76- 16	%- 18	61/4	3/8	.39	.56
1422		76- 5/s	%- 7/s	61/4	3/8	.39	.56
1423	%- 76		16- 65	61/4	%	.39*	.56*
1424	3/8- 1/2		16- 7/8	71/2	16	.53*	.75°-
1425		1/2- 16	3/4- 18	71/2	Yo	.53	.75
1426		1/2- 5/8	3/4- 7/8	71/2	10	.53	.75
1427		1/2- 3/4	3/4-1	71/2	10	.53	.75
1428 1429	76- 1/2		33- 7/s	71/2	16	.53*	.75*
1430	76- fe	- %	35- 31	71/2	1 G	.53*	.75*
1431			18- % 18-1	71/2	1/2	.53	.75 1.00
1432	1/2- 16	16- 74	7/8- 31	9	1/2	.72*	1.00*
1433		5/8- 3/4	7/8-1	9	1/2	.72	1.00
1434	1/2- 5/8		7/8-1 1to	9	16	.72*	1.00*
1435		5/8- 7/8	7/s-11/s	9	16	.72	1.00
1436	16- %		31-110	9	10	.72	1.00
1437					16	1.00*	1.35*
1438		3/4- 7/8	1 -11/8	101/2	16	1.00	1.35
1439	5/ 3/	3/4-1	1 -11/4	101/2	l'a	1.00	1.35
1440 1441	5/8- 3/4 5/8- 3/8		116-11/4	101/2	18	1.00*	1.35*
1442	/8- /8	7/s-1	1½-1½ 1½-1¼	$10\frac{1}{2}$ $10\frac{1}{2}$	16	1.00	1.35 1.35
1443		7/s-11/s	11/8-13/8	101/2	16 9 16	1.00	1.35
1444		1 -11/8	11/4-13/8	12	5/8	1.45	1.90
1445	3/4 - 7/s		14-116	12	5/8	1.45	1.90
1446	3/ 1	1 -11/4	11/4-11/2	12	5/8	1.45	1.90
1447	3/4-1	11/ 11/	11/4-15/8	12	11	1.45	1.90
1448 1449	7/8-1	11/8-11/4	1%-1½	12	16	1.45	1.90
1450	7/8-11/s		176-1% 176-118	12 14	116	1.45 2.50	1.90 3.20
1451	1 -11/8		1%-118	14	16 11 16	2.50	3.20
1452	1 -11/4		1%-2	14	11 16	2.50	3.20
1453	11/8-11/4		118-2	14	11	2.50	3.20

Wrenches marked (\*) carried in stock.

Single Lots, 303 P. C. Dozen Lots, 406 P. C.

## B. & S. DISPLAY SALESBOARD FOR WRENCHES

BILLINGS & SPENCER WRENCHES ON DISPLAY BOARD No. 8.





Engineers' Wrenches, 15° Angle, Double Head.

	Lingineers	W I CHICK	3, 10 111	igic, Doc		u.			
		25			Pr	CO			
No.	U.S. S. Bolt Size	Hex. Hear Cap Screv Size	Size Serew S. A. E. Head and Nut	Milled Openings	Semi- Finished	Finished			
1109 1111 1112 1116 1118 1123	18-14 14 14 14 16-% 38-10	15c 1/4-15c 15c-3/8 15c 3/8-17c	1/4-16 1/4-16 1/6-3/8 1/6-16 3/8-16	12-1/2 16-1/2 1/2-16 1/2-18 1/2-18 16-5/8 12-11 16-33 17	\$0.21 .25 .25 .25 .31 .31 .37 .45	\$0.32 .38 .38 .38 .46 .46 .56			
1126	1/2	1/2-5/8		3/4-7/8		.00			
2000 2007 2017 2025	1/4 3/8	ight Serv 16-1/4 16-9/8 17-1- 1/2-1/6		Vrenches 3/8-1/6 1/2-1/6 5/8-1/6 3/4-1/8	.27 .34 .43 .55	.38 .47 .58 .72			
Price, complete, with board of 3 of each size wrench— Semi-finished \$11.97 Full finished 17.31 Shipping weight, 20 lbs.									

403 P. C. Board and wrenches are packed together in pasteboard carton suitable for parcel post shipping. Size of board, 26x9 %."

Hooks are permanently fastened and the board is ready for the dealer's immediate use.

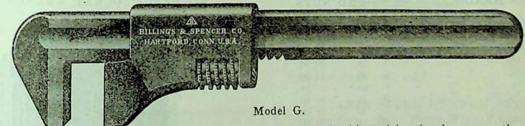
			>			
		25	5.4 =	20	ರ	7
	v	9 2 2	IM-E	2 3	1 0	9
· ·	2 2	H 5 %	3 . 5%	2.5	27	20
No.	20 0 22	0	0.40-	===	5.5	-=
	U. S. S. Bolt Size	X Co.	9. A E	Zě	v. =	Finished
	9	26	200 E	Milled Openings	Semi- Finished	1
		Hex. Head Cap Screw Size	Size Screw S. A. E. Head and Nut	-		
1.40						00.00
1107	10-1/1	16	16	33-1/2	\$0.21	\$0.32
1109		1/4-18	1/4-15	70-1/2	.25	.38
1111		18-3/8	16-3/8	1/2-16	.25	.38
1112				1/2-13	.25	.38
1117		3/8-1/2	3/8-1/2	18-3/4	.31	
1118	5, 3/			33-18	.31	.46
	16-78	7 9	7	5/ 13	27	
1121		16-16	ī	78-10	.37	
1123X			1/2	14.74	.37	.56
	7 1/	5/	9	25 7/	.45	
			Ye			
1136	Pa-5/9		3/4	32-115	.68	1.08
To	wile W.	ranches	22½° An	ale Dou	ble Hea	d
16	xtile w	enches-	4472 AII	gie, Dou	Die IIea	u.
1557		4-16	1/4-16	16-72	.25	.38
1559	1/. 5		Ť	1/2.12	.31	.46
	74-16		16	9 5/	.01	
1562		3/8-16	3/8-16	18-5/8	.31	
1566				14-33	.40	.60
	75-16	1/ 9	1/			
1568		1/2-18	1/2		.40	.60
	Τ;	wht Saru	ice "S"	Wrenche	•	
	Li	git Serv	ice 5	Wienche	o	-
2000		1/4	1/4	78.16	.27	.38
2007		5 3/	13-3/8	1/2-2	.34	.47
2017		78	16	%-16	.43	.58
2025		1/2-18	1/2	3/4-13	.55	.72
		5/	9 5/			.90
2035		%	18-%	7/s-18	.70	.30

Price, complete, with board of 4 of each size wrench-

Semi-finished .....\$29.64

406 P. C. B. & S. ADJUSTABLE AUTOMOBILE WRENCHES.

Full finished ... Shipping weight, 71 lbs.



Drop-forged of steel throughout. A very strong and serviceable tool for the shop or on the road.

								Tota	ıl		Thickn	ess	Depth	
								Leng	th	Opens	of Ia	w	of Jaw	Weight
								61/9		114 ir	. 18	in	l in.	101, oz.
Mod	el	G,	No.	1.	6-inch	wrench		072					11/4 in.	161/2 oz.
			No.		8-inch	wrench		8	111.	lia ir	-			
			No.		10 inch	wrench		10%	in.	2 to in	. 16 1	n.	11/2 in.	1% lb.
Mod	CI	G,	MT.	٥.	10-inch	wrench		121/4	in.	2¾ in	. 16 1	n.	11/2 in.	2 lb.
MOU	eı	G,	No.	4.	12-inch	wrench		143/4	in	211 in	ya i	n.	13/4 in.	3¾ lb.
Mod	el	G,	No.	5.	14-inch	wrench				3 in	24 1		21/s in.	61/2 lb
Mod	el	G.	No.	6.	18-inch	wrench		1871	111.	ole II				
		-					Model G. Wren	iches.				PRICE	, EACH	
										Inches	Semi-Fin	ished	Full Fini	ished Black
	0.								-	6	\$1.15		\$	1.30
1.										0	1.50			1.70
2 .										0				2.25
3										10	1.90			MODEL NO.
4							THE REAL PROPERTY.			12	2.40			2.90
2 .									1	14	3.00	133		3.60
<b>b</b> .										19	3.75			4.50
6 .										10	0.10	Section 1		
				11			456 P. C							

Dozen lots, 551 P. C.



No. 14.

#### "CHECK NUT" OR "THIN" WRENCHES.

#### For A. L. A. M. Standard Nuts and Cap Screws.

	Size Bolt	Milled		Thickness
No.	or Screw.	Openings.	Length	of Heads
1350-X	1/4-16	3/8- 1/2	41/2 in.	de in.
1353-X	3/8-16	76 18	5½ in.	å in.
1356-X		14- 1/8	7 in.	a's in.
1359-X		12-1	8½ in.	- 1/4 in.
1362-X	3/4-3/8	11/8-11/4	10½ in.	in.
No.	I	Prices. Sem	i-Finished.	Finished.
1350-X			\$0.25	\$0.38
			.32	.48
1356-X			.40	.60
1359-X			.56	.80
1362-X			.84	1.15
Price per set, in	pastboard	box	2.37	3.41
Bag			.45	.45

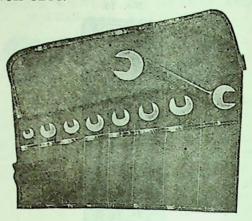


No. 15.

# FOR HEXAGON HEAD CAP SCREWS AND NUTS FOR SAME.

No.	Size of Screw	Milled Openings.	Length.	Thickness of Heads.
1109 Cap	1/4-16	70 1/2	5 in.	in.
1116 Cap	3/8-16	16- 3/4	6 in.	11 in.
1125 Cap	1/2-16	34 18	8 in.	i in.
1133 Cap	3/4-3/4	7/8-1	9 in.	42 in.
1112 Nut	1/4 - la	1/4- 12	5 in.	re in.
1123 Nut	%- la	11- 39	6¾ in	3/s in.
1132 Nut	1/2-1/6	34- 81	9 in.	30 in.
1140 Nut	1/4-1/4	1 % 11/4	11½ in.	12 in.
No.		Prices. Sen	ni-Finished.	Finished.
1109 Cap			\$0.25	\$0.38
1116 Cap			.31	.46
1125 Cap			.45	.68
1133 Cap			.55	.85
1112 Nut			.25	.38
1123 Nut			.37	.56
1132 Nut			.55	.85
1140 Nut			.96	1.40
	set, in pasteboa		3.69	5.56
Bag			.70	.70
When	ordering, spec	ify number	model and	finish

When ordering, specify number, model, and finish. Single Sets, 30/ P. C.



No. 44.

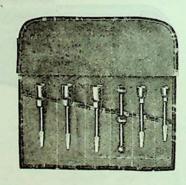
# FOR HEXAGON HEAD CAP SCREWS AND NUTS FOR SAME.

No.		Milled Openings.	Length.	Thickness of Heads.
1557 Cap	 1/4-16	is- 1/2	4¾ in.	
1562 Cap	 3/8-10	Pa- %	5% in.	Te in.
1568 Cap	 1/2-10	3/1- 18	7 in.	11 in.
1575 Cap	 3/8-3/4	7/s-1	9½ in.	ig in.
1559 Nut	 1/4-16	1/2- 48	5% in.	is in.
1566 Nut	 3/8-16	14 32	7 in.	3½ in.
1574 Nut	 1/2-76	7/s- #4	81/4 in.	% in.
1580 Nut	 3/8-3/4	1.fa-11/4	11 in.	½ in.

															P	,	i	C	0.5	s.			
No.																					Si	emi-Finished.	Finished.
1557 C	ap																					\$0.25	\$0.38
1562 C	ap																					.31	.46
1568 C	ap																					.40	.60
1575 C	ap																					.72	1.05
1559 N	lut																					.31	.46
1566 N	lut																					.40	.60
1574 N	lut																					.53	.78
1580 N																						.96	1.40
Price,	per	se	t,	i	11	I	a	ıs	te	el	)(	a	T	d		b	0	X				3.88	5.73
																						.70	.70

When ordering, specify number, model, and finish.

#### BIT BRACE SOCKET WRENCH SETS.



									No. 16.		
							L	. S. Std:			Price,
No.							E	Bolt Size.	Openings.	Length.	Finished.
923A								1/4	33-64	4%	\$0.65
924B								Pa-	39-64	51/4 .	.72
									45-64	53/4	.89
926A								16	51-64	53/4	.97
926C								1/2	57-61	6	1.10
Hand	le										.60
Bag .											.60
Set N	0.	16	6,	C	0	1	np	lete, we	ight 14lbs		5.50
									sets or more		

#### BILLINGS & SPENCER GENERAL SERVICE WRENCHES.



For use on Automobiles, or for erecting and dismantling Plows, Carriages, Wagons, etc. It is light and handy, but strong, being drop-forged from the best bar steel, and casehardened

#### Set No. 1.

				Thick-			
	For Mfrs.	Milled		ness	Pric	e	
	Std. Nuts	Open-		of	Semi-	Fin-	
No.	Size Bolt	ings	Length	Heads	Finished	ished	No.
2002	3-1/4	13-1/2	61/4	372	\$0.27	\$0.38	2002
2009	1/4-15	1/2-5/8	71/8	1/4	.34	.47	2009
2017	75-3/8	5/8-11	81/4	Ĉ.	.43	.58	2017
2023	3/8-76	14-32	91/4	3/5	.55	.72	2023
2032	70-1/2	32-18	103/s	16	.70	.90	2032
Price	Per Set i	n Paste	board H	Box	2.29	3.05	

Bag \$0.45. Weight, 3 pounds.

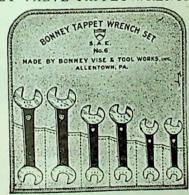
#### Set No. 4.

				F	Price	
	Milled		Thickness	Semi-		
No.	Openings	Length	of Heads	Finished	Finished	No.
2000	3/8-16	61/4	372	\$0.27	\$0.38	2000
2007	1/2-16	71/8	1/4	.34	.47	2007
2017	5/8-16	81/4	16	.43	.58	2017
2025	3/4-18	91/4	%	.55	.72	2025
2033	7/s-18	$10\frac{3}{8}$	76	.70	.90	2033
Price	Per Set in	Pastebo	ard Box	2.29	3.05	

Bag \$0.45. When ordering specify Number, Model and Finish.

Weight, 21/2 pounds. Single Sets, 306 P. C 1/2 Dozen Set Lots, 401 P. C.

#### BONNEY VALVE TAPPET WRENCH SETS.



Three pair of finely finished, extremely thin, strong wrenches especially designed for the difficult and delicate operation of adjusting valve tappets.

Set fits the six different S-A-E nuts most commonly used on valve tappets, namely: ¼-in,, %-in., 16-in., 16-in., 16-in., is-in., and covers practically the entire range of cars.

One set in cardboard box.  BILLINGS & SPENCER 15 DEGREE ANGLE DOUBLE-END WRENCHES.



Set No. 7.

For automobiles, Carriage Makers and general use. A handy assortment, strong, powerful and well balanced.

These Wrenches may be used in combination: a Wrench on the screw head with another on the corresponding nut

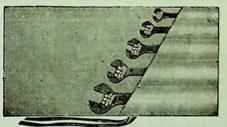
#### Set No. 7

		Size			Thick-	Price		
		of Bolts	Milled		ness of	Semi-	Fin-	
	No. a	nd Screws	Openings	Length	Heads	Finished	ished	No.
	1110			5	Te .	\$0.25	\$0.38	1110
		1/4-3/8		6	31	.31	.46	1114
	1119	16-16	32- 32	63/4	3/8	.37	.56	1119
	1120	76-1/2	3/8- 3/4	63/4	3/8	.37	.56	1120
1	1133	3/s-3/4	7/8-1	9	39	.55	.85	1133
	1140	3/8-3/4	116-11/4	111/2	33	.96	1.40	1140
	Price	Per Set	in Pasteb	oard B	ZO	2.81	4.21	
	Bag	\$0.60						

When ordering specify Number, Model and Finish.
Weight 4½ pounds.

Wrenches marked V Carried in Stock. Single Sets, 307 P. C. 1/2-Dozen Set Lots, 401 P. C.

#### THIN STEEL WRENCH SETS No. 7.





This set of Wrenches is of the thin steel variety. Will fit all Standard and A. L. A. M. nuts and bolts, from 4-inch to 1/8-inch. Set consists of six Wrenches. Weight 13/4 pounds.

#### THIN STEEL WRENCH SETS No. 4.

Strong, light, thin. Every Wrench guaranteed Jaws will not break nor spring. Made of a special analysis of steel. Set of five Wrenches, openings %-inch to %-inch. Weight,

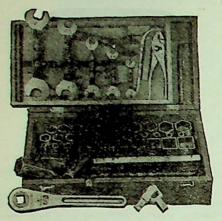
#### ALL-IN-ONE WRENCH SETS.

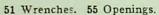


Nine Wrenches in One. Simply pull out Wrench wanted. Best of materials. Same as Wrenches used in the Thin Steel Wrench Sets. Openings, %-inch to \$\frac{3}{2}\$-inch. Weight. 8 ounces.

MOSSBERG No. 14 SOCKET WRENCH SETS.







For every sort of work—14 Set is offered for your earnest consideration. The clever reversible handle, the splendid range of stockets (each one guaranteed over any other socket made), the full set of offset open-ends, the "complete-ness" of its equipment, all make No. 14 Set a really wonderful box of tools.

Consists of 34 sockets.

Handle (ratchet socket)

Handle (ratchet socket).

Take-down "T" handle Offset handle.

S-A-E Double-End Wrenches—5 wrenches, 10 openings Universal joint. 3 special spark plug sockets, 32, 32, 132. Gripsall pipe wrench. Long extension tube. Cotter pin tool. 1 double-end offset screw driver. Put up in wooden box.

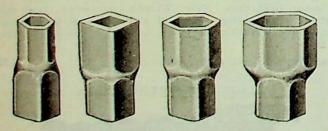
No. 14. Socket wrench set. Price.........\$16.00

#### Extras for No. 14 Sets.

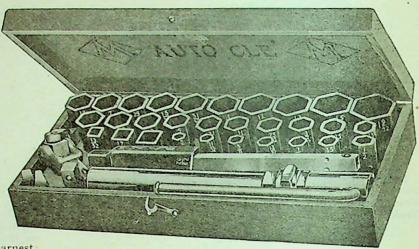
Single end spark plug wrenches, No. 401,	
31-inch; No. 406, 31-inch; No. 421, 132-inch	 \$0.30
No. 350 Ratchet socket wrench handle	 2.75
No. 355 Ratchet socket handle	 1 35
No. 320 Offset socket wrench handle	 .33
No. 322 Double end socket wrench handle	 .35
No. 340 Take-down "T" handle	 .65
No. 336 Universal joint	 .65
Screw driver bits	 .10

331 P. C.

#### EXTRA STEEL SOCKETS FOR MOSSBERG SETS.



In ordering sockets, dimensions of nuts should be specified, measured across the flats, or, in other words, the smallest diameter of nut or bolt head, and unless actual size of socket is ordered, we automatically allow 32-inch each for clearance.



The Large Auto-Cle Set consists of the following:

One take-down reversible ratchet handle.

One swivel or universal joint for using wrench at any angle.

One 91/2-inch extension bar; one 13/4-inch extension bar.

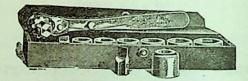
Two sizes screw driver bits; thirty-one sizes of steel sockets.

Special spark plug socket, 4 inches long.

In hardwood case, fitted with pegs on which to place sockets, preventing loss of parts.

Small Auto-Cle Set, same as large set, with the exception that twelve sizes of sockets are furnished in place of thirty-one sizes.

#### UNIQUE RATCHET WRENCHES.



The ratchet is reversed by shifting the wire on handle from one side of the lug to the other.

An extension can be procured by using ½-inch hexagon bar, using one end in the small socket and the other in the small opening of the other sockets.

The complete set consists of ten pieces, as follows:

Ratchet handle, 7 inches.

Two screw driver blades.

Seven socket wrenches to fit the following semi-finished hexagon nuts:

	No.	No.	No.	No.	No. 1	No.	No.
Sockets	1	2	3	4	5	6	7
	In.	In.	In.	In.	In.	In.	In.
U. S. standard bolt	. 1/4		15		3/8	76	1/2
U. S. stand, castellated	1/4	Odd	7 <sup>5</sup> 6	Odd	3/8	70	1/2
A. L. A. M. castellated	า้ซ	cap	3/8	cap	70	1/2	16
A. L. A. M. plain	16	screws	3/8	screws	76		16
Cap screw	า้ง				16	1/2	%

In heavy leather case, weight 22 ounces. Each .. 3008 \$3.50

#### SOCKET WRENCH SETS FOR FORD CARS.



Mossberg No. 30.

Contains:

Ratchet Socket Handle (with grasp-spring to lock sockets).

Universal Joint.

Extension Tube. -

Screw Driver Bit.

Ten Pressed Steel Sockets.

Sizes in the Hexagon-12, 12, 12, 12, 12, 12, 12, 12.

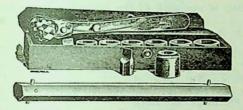
Size in the Square—35 to fit main bearing nuts and bolts on 1915 models.

Oval Socket—To fit main bearing nuts and bolts on models previous to 1915.

Spark Plug Socket—31 to fit the "Champion X" plug now in common use.

No. 30. In Leather Board, weight 4 pounds. Pet set..\$5.50

#### UNIQUE RATCHET WRENCHES FOR FORD CARS.



Consists of ten pieces:

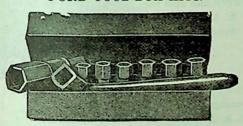
Ratchet Handle, 7 inches.

Two Screw Driver Blades.

Extension Bar, 7 inches.

Six Socket Wrenches to fit all nuts and bolt heads on Ford cars, including cylinder head, from 18 to 18-inch. In heavy leather case, weight 2 pounds:

#### FORD TOOL BOX KITS.



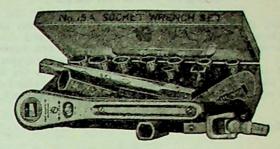
No. 61.

This Ford wrench set is made of the best quality malleable iron and finished in hard baked black enamel. Packed in a strong fibre box, it is easily stowed away in the tool box and out of sight 'til it's needed. This set is made up of one 8½-inch socket wrench, one spark plug socket, one oval socket for end bearings of crank shaft, and the following sizes in hexagon sockets:

Opening sizes: 15/32, 18/32, 19/32, 21/32 and 23/32.

Weight per set, 2 pounds.

#### SOCKET WRENCH SETS FOR FORD CARS.



Mossberg No. 15.

No. 15 Set is for exclusive use on Ford Cars, and completely covers all adjustments that are to be found on these machines, containing:

Ratchet Socket Wrench.

Tubular Extension Bar.

Universal Joint.

Screw Driver Bit.

Spark Plug Socket.

Eleven regular, mottled, thoroughly hardened Pressed
Steel Sockets, fitting standard sizes of screws, nuts
and bolts. Spark plug socket for Champion X plugs.
One special 48-inch Oyal Socket for three crank shaft

One special 12-inch Oval Socket for three crank shaft bearing bolts.



Mossberg No. 17.

A "Heavy-Duty" Socket Set. Five steel bars, with a guaranteed socket firmly affixed to each end.

Consists of 10 sockets

Hexagon-11, 12, 31, 32, 32, 32, 31, 31.

Square-15.

Spark Plug Socket-31, 4 inches long.

Oval Socket-For Ford main bearing nuts.

No. 17 Set. In Canvas Case. Weight, 4 pounds. Each. \$3.75

#### B. & S. WRENCH SETS FOR FORD CARS.



No. 13.

The set consists of two open end wrenches and two socket wrenches to fit every nut on the Ford car. Also a spark plug wrench to fit the spark plug furnished with the Ford car. The set is packed in a canvas bag.

No. 13 Set. Price.....\$2.80

401 P. C.

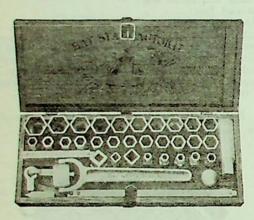
#### SOCKET WRENCH SETS.

Heavy duty Socket Speed Wrench set. Includes 15 sizes of sockets to fit all U. S. and S. A. E. bolts and nuts and screws up to % dia. A universal joint and connection socket. An all-steel speed brace handle with drawn steel swivel top, and which sockets are retained to the handle by a ball and spring friction. With sockets attached the whole wrench develops 1914" long Finished in black, rustproof.

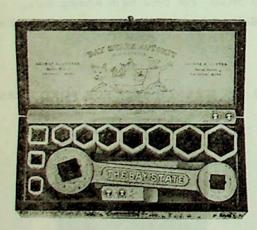
No. 45 Set. Price, each.....\$9.00

35 P. C.

#### BAY STATE AUTOKITS.



Universal drop-forged steel handle; reversible slidable steel ratchet; two steel extension spring ball shanks; steel screw-driver and shank; steel coupling; steel universal joint; spark plug socket; thirty sockets made of heavy gauge steel; white nickel finish, black hardwood box, mahogany inside finish; fastened by a substantial strap. Weight, 10 pounds.

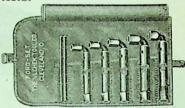


No. 3. For Ford Cars.

A high-grade Socket Wrench Set, that will reach the hard places. Has a quick-acting double-ended ratchet wrench and eleven heavy gauge pressed steel sockets, case hardened and nickel-plated, heavy screw driver, and 7-inch extension steel shank. Sockets include special long one for removing spark plugs, and one of special design to fit nuts on Ford crank shaft bearings. Packed in strong, blackfinished, lock-cornered box, with heavy brass hinges. 

#### VLCHEK BENT SOCKET WRENCH SETS FOR FORD CARS.

Consists of one each of the following Wrenches:
Size F51. For Rear Axle
Housing Bolt Nut and all 4-inch U. S. S. Nuts and 16-inch Cap Screws. Size F52. For Rear Axle Housing Stud Nut and all 3/s-inch Cap Screws.

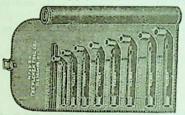


No. 926.
Size F53. For Drive Shaft Housing Nut and all fe-inch U. S. S. Nuts and fe-inch Cap Screw Heads. Size F55. For Crank Shart Bearing Boit Nut and all 1/2-inch Cap Screws. Size F58. Special for Flat Head of Low Speed Adjusting

Screw.

Contained in heavy canvas case, including bars for turning. Weight, 31/2 pounds. 

#### VLCHEK BENT SOCKET WRENCH SETS.



No. 922.

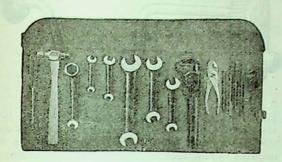
Consisting of one each of t	he	follo	wing	Wi	enc	hes:		
Size	50	51	52	53	54	55	56	57
For U. S. S. Nut. Size of								
Bolt		1/4		16	3/8		18	1/2
For Cap Screw Head. Size								
of Bolt	1/4	18	3/8	16		1/2	16	5/8
For S. A. E. Nut. Size of								
Bolt	1/4	re	3/8	7'G		1/2		Te.
Size of Openings in Both								
Ends	TG	1/2	18	5/2	17	3/4	18	7/8
Contained in heavy canvas	s ca	se, i	nclud	ling	bar	rs fo	r tu	ırıı-
ing. Weight, 5½ pounds. No. 922. Price, each						200	, S	4.00
Trice, each						. 300.	. 4	

#### BONNEY FORD WRENCH SETS.

The wrenches fit every nut on a Ford and also the following S. A. E. and A. L. A. M. standard nuts:



	No. 9.	Length
No. Openings.	For Nuts and Cap Screws.	Inches.
23F 3/4 & 74	14 A. L. A. M.14 S. A. E.	
	1 16 Cap Screw 1/4 Cap Screw	41/4
	To A. L. A. M. 3/8 A. L. A. M.	
25F 1/2 & 16	16 S. A. E. 3/8 S. A. E.	5
	18 Cap Screw % Cap Screw	was a still
	14 U. S. S.	
27F % & ¾	To S. A. E. 1/2 A. L. A. M.	0.
	To Cap Screw 1/2 S. A. E.	6
29F18 & 85	1/2 Cap Screw 1/3 A. L. A. M. 1/6 U. S. S.	63/4
and the same of	( 16 A. L. A. M. 8 A. L. A. M. )	074
33F 7/8 & 18	& S. A. E. % S. A. E.	9
Reverse gear	1 % Cap Screw 1/2 U. S. S.	I Specific Co.
	1 Te S. A. E. Te A. L. A. M. I	08/
100F% & 11	1 To Cap Screw	8%
No. 9. Price, pe	r Set, in Pasteboard Roy	1102 \$2.25



No. 10.

#### AUTOMOBILE TOOL KITS.



Natural Finish Tool, Hard ned and Tempered.

8-oz, Ball Pein Hammer. 1-%" Drive Punch. 6-inch Combination Plier. 1-5" Rd. Shank Screw

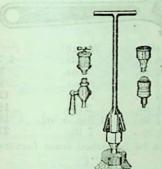
-Engineer Dbl. End

Driver. 1-9" Adj. Auto Wrench.

Wrenches 1/2" Cold Chisel

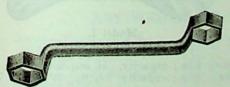
Wt., 11/4 lbs.

#### UNIVERSAL GREASE CUP WRENCHES.



A Utility Tool that ends automobile drudgery. Fits all sizes and types. 

#### SPARK PLUG WRENCHES.



Made especially to fit Champion X Spark Plugs, one end 

This Kit is made up of B. & S. Drop-Forged Tools exclusively, and consists of a

9" All Steel Screw Driver

3/4 lb. Ball Pein Hammer.

6" Nickel Pliers.

Adjustable Wrench, Black.

10" Adjustable Wrench, Full finish.

812 Spark Plug Wrench, box end 115"

1104-1111-1119X-1126-1136 Dbl. End Wrench.

3/8" Cold Chisel, 3/4" Punch, Cotter Pin Tool,

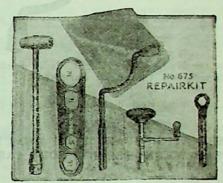
Offset Screw Driver.

Weight, 8 lbs.

No. 10. Price, complete, including bag.....\$12.00

301 P. C. In lots of 6 or more, 103 P. C.

#### MOSSBERG REPAIR KITS FOR FORD CARS.



Contains

Valve Grinder

Triple-End Cylinder Head and Rear Axle Housing Wrench.

Connecting Rod Wrench for No. 4-CR.

Hub Cap Wrench.

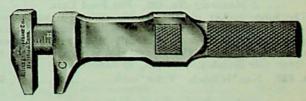
Double End Transmission and Service Wrench.

Weight, 212 ounces.

No. 675. Repair Kit. Price, each......\$2.45

333 P. C.

#### BILLINGS' IMPROVED PATENT ADJUSTABLE POCKET WRENCHES.



For use on bicycles, motorcycles, automobiles, etc.

Drop-forged from bar steel, and finished in black and full nickel-plated. Sliding bar graduated to 32ds of an inch,

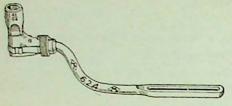
Model C. Length, closed, 5"; open, 1". Thickness of jaw, is"

Weight, 7 oz.

Model C. Black. Price, each.....\$1,50 

306 P. C. In lots of 6 or more, 101 P. C.

#### MOSSBERG RATCHET SOCKET WRENCHES.



No. 624.

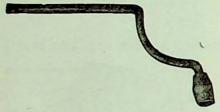
#### For Ford Connecting Rods.

Shaped to reach up and over the edge of pan and on the nuts of the connecting rod.  $11\frac{1}{4}$  inches long; hardened socket opening,  $\frac{1}{4}$ -inch, for use on other  $\frac{7}{4}$ -inch screws.

No. 624. Price, each.....\$2,50

334 P. C.

#### MOSSBERG CONNECTING ROD WRENCHES.



Especially for No. 4 Connecting Rods on Fords. Mottled finish, and thoroughly hardened. Weight, 10 ounces.

No. 623. Connecting Rod Wrench. Price, each......\$0.30

# ORO COMBINATION SPARK PLUG AND CYLINDER HEAD WRENCHES FOR FORD CARS.



Drop forging made from steel of the right caroon, fits accurately the cylinder head bolts and spark plugs on Ford Cars.

# CYLINDER HEAD AND AXLE HOUSING NUT WRENCHES.



Mossberg No. 630. For Ford Cars.

The large socket on the double end gives high-powered leverage to start or tighten cylinder head nuts. The single end socket twirls these nuts rapidly after they are loosened. The small socket on the double end is tapered to fit nuts on rear axle housing. Weight, 10 ounces.

No. 630. Nut Wrench. Price, each......\$0.30

#### MOSSBERG RATCHET TENSION SPRING WRENCHES. -

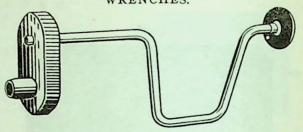


Reverse and Brake Pedal Tension Spring Wrenches. For Fords. Weight, 3 ounces.

No. 645. Price, each.....\$0.30

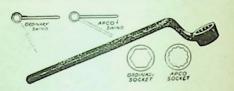
337 P. C.

# PERFECTION FOURTH CONNECTING ROD WRENCHES.



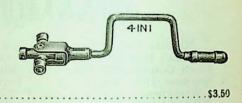
#### APCO CONNECTING ROD WRENCHES.

Is really a onepiece ratchet and this effect is obtained by double cutting the socket and giving twice as many grips as in the ordinary wrench. Will not



#### BLACKHAWK 4-IN-1 UNIVERSAL RIM WRENCHES.

Holds %, 16, 34 and 78". The handle is %" steel. The 4-size socket head is one piece drop forging. No springs or small parts to break.



336 P. C.

#### NO. 10 ADJUSTABLE WRENCHES.



Si	ze	Capacity	Weight	Per doz.	Each
4	in	½ in.	2 oz.	\$ 7.80	\$ 0.65
6	in	3/4 in.	5 oz.	7.80	.65
8	in	18 in.	10 oz.	9.60	.80
10	in	11/s in.	18 oz.	12.00	1.00
12	in	1 fe in.	2 lbs.	18.00	1.25
15	in	111 in.	4 lbs. 5 oz.	19.20	1.60
18	in	216 in.	7 lbs.	27.00	2 25

Extra parts can be furnished from factory only. 204 P. C.

#### B. & S. ADJUSTABLE WRENCHES.



Model I. Drop Forged Steel.

List, Plus 153 P. C.

#### INTER-CHANGEABLE SOCKET WRENCH SETS



#### INTER-CHANGEABLE SOCKET WRENCH SET NO. 27

A complete, heavy duty socket wrench set for use by mechanics or millwrights in servi c station, garage or general factory and min service.

Price complete.....\$
Box size 16 x 10 x 2%. Weight 25.00 lbs. ..\$24.20



## INTER-CHANGEABLE SOCKET WRENCH SET

Assortment particularly selected to fit Ford cars.

No. 516—9" Ratchet Wrench.

No. 1139—9" Extension Bar.

No. 1102—Universal Joint.

No. 1109—Plug Connections (two)

7 Sockets—Hexagonal %, %, %, %, %, %, %, 1%, 1%, 1%, 1% of the second secon

Price complete.....

Box size 10% a x 4 x 2%. Weight 7.00 lbs.

-			SIZES SCREW-BOLT-NUTS				
1		SOCKET STOCK NUMBERS		NUTS P SCREWS	lurs	REWS	FADS
	STO			S.A.E. CAPS	IS. STAN!	US. CAPSC	U.S. BOLT HE AD
Ì	112	HEILIGER	3/8	0,		- vi	01
	114	214	7/16	14		14	
	116	216	1/2	16	4	5	14
١	118	218	9/16	3 8		3	
į	MA	219	19/32		5		5
į	120	220	5/8	7	- 5	7 16	
ı	122	222	11/15		3		3
	124	224	34	1 2		12	
ı		225	25/32		716	_	7 16
ł		226	13/6			9	
ı	128	228	78	16	1/2	58	2
Ì	To be	230	15/6	58			_
		231	3/32		916		9 16
	132	232	1	16		34	_
		234	1/16	34	58	_	50
	136	236	1/8			78	
	140	240	14	8	3	1	34



Sockets—Sockets are machine made from the solid bar. Broaching depth is the thickness of the nut to be fitted, and broached %4" over the size of the nut. Sockets are counter drilled making extreme bolt size depth of socket %" more than the thickness of the nut. The outside diameter of the socket size and taper have been designed to insure strength and service conditions. The broached end is countersunk slightly to relieve the square edges and to allow more rapid placing of socket on bolt head. All sockets are heat treated.



#### INTER-CHANGEABLE SOCKET WRENCH SET NO. 9 IN CANVAS ROLL

The set should be included in the tool box of every motor car.

No. 1105—Combination T and Offset Handle.
No. 1139—Extension Bar.
No. 1109—Plug Connector.
7 Sockets—Hexagonal 4, %, %, %, 14, %, %, 16.

Price complete......\$4.50 Packed in waterproof canvas roll. Weight 3.25 lbs.



## NO. 26 INTER-CHANGEABLE SOCKET WRENCH SET

This set is similar in every respect to the No.

Price complete...

Box size 16 x 101 x 21. Weight 19.25 lbs.



## NO. 16 INTER-CHANGEABLE SOCKET WRENCH SET

A most desirable socket wrench set for owner's use and for general service where the pur-chase of the larger No. 27 set would not be

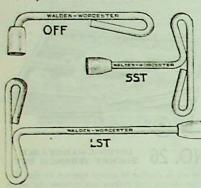
Box size 12 x 5% x 2%. Weight 11.00 lbs.

## ANY WRENCH OR SOCKET MAY BE OBTAINED SEPARATELY

37.	100 C . T I W I (G.4) 81	SE I No	1108 Brace Ton	.55 Nos. 112-118 Steel Sockets	.33
No.	100 Open End Wrenches (Set)	.001 110.	1100 Diace Topici	.33 Nos. 120-122	41
No	516 Ratchet Wrench	75   No	1109 Plug Connector		
					.66
No.	716 Ratchet Wrench 3	3.30   No.	1110 Socket Connector	.44 Nos. 214-222.	99
17.	100 II	CE No	1125 5" Extension Bor	.44   Nos. 214-222	.00
No. I	102 Universal Joint	.00   NO.	1100 0 Datemater Date	.55 Nos. 224-230	41
No 1					
	100 Comb. I and Offset Handle	00 10.	Ting of Tracelland	1.65 Nos. 231-240	.55
NT- 1	1107 Press W 1	10 No	1178 Brace Wrench	1.05; 1105. 201-210	.00

## TEE AND OFFSET HANDLE SOCKET WRENCHES

Wire handle construction and machine turned sockets make it possible to produce an equally well made and serviceable tool at much lessest than usual drop forged wrenches. Sockets are steel, machine turned from solid bar and broached accurately to size. Wire handles are proper size and class of material to guarantee service. Sockets are so fastened to the wire they will not turn or loosen.



SIZE	OFF	SST	LST
7,6	2514	2614	2714
1/2	2516	2616	2716
9/6	2518	2618	2718
19 32	2519	2619	2719
5/8	2520	2620	2720
1/16	2522	2622	2722
3/4	2524	2624	2724
25/32	2525	2625	2725
13/16	2526	2626	2726
28	2528	2628	2728

Offset Socket Wrenches. Handles 7", 10 sizes as listed.

No. 2500 Series All Sizes

Each .50

Short Shank Tee Handle Wrenches. Handle 6 inches, Shank 6 inches, 10 sizes as ! isted.

No. 2600 Series. All Sizes

Each .55

Long Shank Tee Handle Wrenches. Handle 6 inches, Shank 12 inches, 10 sizes as listed. No. 2700 Series. All Sizes Each .60 Each .60



#### STEEL OPEN END WRENCHES

Thin stamped wrenches are most useful in many places. Special steel used to give strength and wearing qualities. Sizes are 1" x %, % x %c.

No. 100 Set (5 wrenches) (Sold in sets only)

#### UNIVERSAL JOINT TEE HANDLE WRENCHES



"Tee-Flex" Wrenches have met with such great success during the past two years that one more has been added with a 34" hex. opening, particularly for cylinder to base nuts on truck and tractor motors.

1016 Length over all 13¼". Socket size ½".

Recommended specifically for use on; Cleveland, Dodge, Essex, Franklin, Hudson, Hupmobile, Marmon, Maxwell, Nash, Oldsmobile. Each \$2.50

1018 Length over an Size ht.

Recommended specifically for use on: Buick, Chalmers, Chandler, Cleveland, Cole, Commerce, Dodge, Dort, Ford, Franklin, G. M. C., Grant, Hupmobile, Lincoln, Mack, Marmon, Maxwell, Nash, Oakland, Overland, Peerless, Pierce-Arrow, Stutz, Wills St. Claire, Winton.

Each \$2.50 Length over all 134". Socket

Length over all 134". Socket size 1020 Recommended specifically for use on: Dort, Ford, Hupmobile, Jordan, Liberty, Lincoln, Mack, Marmon, Mitchell, Nash, Oldsmobile, Overland, Peerless, Pierce-Arrow, Scripps-Booth, Stewart, Stutz.

Each \$2.50

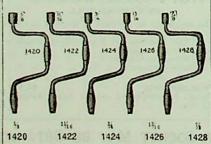
Length over all 134". Socket size 146". 1022 Recommended specifically for use on: Cadillac, Chalmers, Liberty, Maxwell. Each \$2.50

Length over all 13%". Socket size

Recommended specifically for use on: Buick, Chandler, Cleveland, Cole, Essex, Federal, G. M. C., Lincoln, Mack, Nash, Peerless, Selden, Stewart, Studebaker, Wills St. Claire, Winton.

Length over all 13%". Socket size 1028 Recommended specifically for use on: Federal, Mack, Pierce-Arrow, Republic, Selden, Stewart, Stutz, White.

#### BRACE RIM WRENCHES



There is only one size nut on any rim so that this solid handle tool fills all requirements (no loose socket to be misplaced),

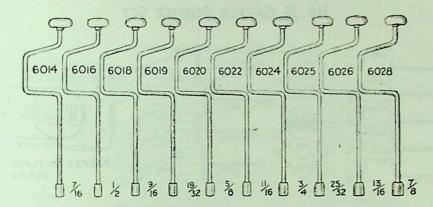
No. 1400 Series. All Sizes.

Each i.10

#### **BRACE WRENCHES**

Suggestive Uses			
Car	Year	Model Wre	nch 422
Allen 1	916-18 919-21	43 1	424
Apperson	916-21	All 1	422
	917-21 917-21	All	424
Buick 1	917-22	All 1	424
Cadillac I	916-22 919		420
Case 1	920-21	"V" 1	422
Chalmers 1 Chandler 1	917-21 916-19		420
Chandler	920	A11 1	424
Chandler I	920	All	422
Chevrolet I Cleveland I	917-22	All I	422
Cole 1	916-22	All	1422
Cunningham Davis	1919-22 1920-21		422
Dodge	1915-16 1917	All	424
Dodge 1	1917		1420
Dodge 1	1918 1920	All All	424
Dodge 1	1921	All	1420
	1917-21 1917	All 1422-1	424
Elgin	1918-21	All	1422
Essex	1920-22	"A"	1420
Ford Gardner	1919-22 1919-22		1420 1424
Grant	1915	T	1422
	1916 1917		1422 1422
Grant			1422
Grant	1919	GX	1424
Grant Grant	1920 1921	HX-H-HY HX-HZ	1422
Haynes	1919-22	HX-H-HY HX-HZ All	1422
Hudson	1916-22	All	1420
	1917-22 1918-22	All	1420 1422
King	1916-21	All	1424
	1917		1424
Kissell Kissell	1918 1918-21		1424
LaFayette	1921-22	All	1422
	1917 1917		1424 1422
Lexington	1918-22		1422
Liberty	1920-21 1921-22	Al	1422
Lincoln Locomobile	1921-22 1915-22	All All	$1420 \\ 1422$
*Maxwell	1917-21	All 1420-	
Mitchell	1916-18	C-42	1424
	1916 1917-18	D-40 D-40 1422-	$1422 \\ 1424$
*Mitchell	1919	E-40 1422-	1424
Mitchell Moon	1920-21 1917-22	F-40 All	$\frac{1424}{1422}$
	1918	681-685 1422-	1424
	1919	681-5, 41-44 1422-	1424
Nash National	1920-21 1917-22		$\frac{1422}{1422}$
Oakland	1916-21	All	1424
Oldsmobile Overland	1915-21		$\frac{1424}{1424}$
	1918-19 1920-22	4,	1424
Packard	1915-22	All	1422
	1916-17 1918-19		$\frac{1420}{1424}$
Paige	1919		1420
Paige	1920-21	All	1420
	1918-21 1916	All 1422-	$\frac{1424}{1424}$
Peerless	1917-22	All	1422
Pierce-Arrow Premier	1917-22		$\frac{1422}{1422}$
Reo	1917-21 1917-18		1424
neo	1919-22	All	1422
	1920-21 1916-18	All 1422-	1422
	1919-21	All	1422
Scripps-Booth	1919	6-39, 40, 1, 2	1424
Scripps-Booth Scripps-Booth	1920 1921	B-39, 40, 1, 2	$\frac{1420}{1420}$
Sheridan	1921	4-8	1424
Stearns Stephens	1920-22	All	1422
Stephens	1916-17 1918-19		$\frac{1424}{1420}$
Stephens	1918-19	76	1424
Stephens	1920-21	All	1424
	1920-21 1916-22		$\frac{1422}{1420}$
Templar	1919-21	All	1422
Velie Velie	1917-18		$\frac{1424}{1422}$
Westcott	1919-21 1920-21	All All	$1422 \\ 1422$
Willys-Knight	1918-22	Ali	1424
Winton *Models furnish	1919-22 aed with		1422 izes.
***************************************	- with	one of these two	

#### BRACE SOCKET SPEED WRENCHES



Long shank brace socket wrenches are used as speed tools in assembling and dismantling all kinds of machinery and are particularly popular and effective tools on motor car work. These are indispensable tools in any repair shop. New metal knob tops which operate on cone bearings add materially to service value of the tool.

Lengt	th over all 19-1	4" Shank	11-1/4"
No.	Size	No.	Size
6014	7/16"	6022	11/16'
6016	1/2"	6024	3/4"
6018	9/16"	6025	25/32
6019	19/32"	6026	13/16
6020	5/8"	6028	7/8"
Unit	package-5 each	one size ju	te board

No. 6000 Series. All Sizes.

Brace socket speed wrenches are most effective when used on a series of nuts or bolts of the same size, upon work such as the removal and replacement of cylinder heads they effect remarkable time saving and are much to be preferred to any other type of wrench. They may be used in combination with a regular offset wrench for the purpose of loosening Each .88 or finally tightening the nut.

#### SUGGESTIVE USES—SPEED WRENCHES

Socket size 7/16". Recommended specifically for use on: Dodge 6014

6016 Socket size 1/2". Recommended specifically for use on:
Buick, Chalmers, Chandler, Chevrolet, Cleveland, Dodge, Dort, Essex, Federal, Franklin, G. M. C., Grant, Hupmobile, International, Jordan, Marmon, Maxwell, Mitchell, Nash, Oakland, Oldsmobile, Overland, Paige, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Wills St. Claire, Willys Knight, Winton.

6018 Socket size 9/16". Recommended specifically for use on:
Buick, Cadillac, Chalmers, Chevrolet, Commerce, Dodge, Dort, Federal, Ford, Franklin, G. M. C., Grant, Haynes, Hudson, Jordan, Liberty, Lincoln, Mack, Marmon, Maxwell, Scripps-Booth, Stewart, White.

6022 Socket size 11/16". Recommended specifically for use on:
Cadillac, Chalmers, Cole, Dodge, Ford, Lincoln, Maxwell, Oakland, Oldsmobile, Reo, Scripps-Booth, Stewart, Winton.

Oakland, Oldsmobile, Overland, Paige, Pierce-Arrow, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Willys Knight, Winton.

Socket size 19/32". Recommended specifically for use on: 6019 Franklin, Peerless.

6020 Socket size 5/8". Recommended specifically for use on:
Buick, Cadillac, Federal, Ford, Jordan, Liberty, Lincoln, Mack, Marmon, Mitchell, Oldsmobile, Overland, Peerless, Pierce-Arrow, Scripps-Booth, Selden, Stewart, White.

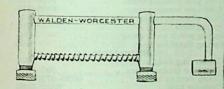
6024 Socket size 3/4". Recommended specifically for use on:
Chalmers, Chevrolet, Cleveland, Dodge, Dort, Federal, Hupmobile, Mack, Nash, Pierce-Arrow, Reo, Selden, Stewart, Studebaker. 16024

Socket size 25/32". Recommended specifically for use on: 6025 Dodge, Essex.

6026 Socket size 13/32". Recommended specifically for use on:

6028 Socket size 7/8". Recommended specifically for use on:

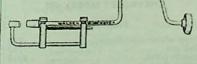
## NUT AND BOLT HOLDING ATTACHMENT AS APPLIED TO TEE HANDLE AND SPEED WRENCHES



This attachment may be used in connection with either the brace speed wrenches (6000 series) or the long shank Tee handle wrenches (2700 series).

> No. 6416 15" No. 6418 %16"

No. 6400 Series.

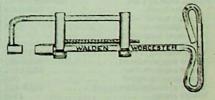


A one man tool. The extension socket holds either the nut or bolt head while the operator spins it off. Extension arm is adjustable for different bolt lengths.

As applied to Speed Wrenches.

No. 6316 15" No. 6318 %"

Each \$2.00 | No. 6300 Series

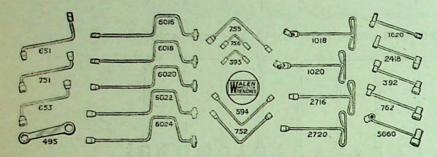


The above illustration shows the nut and boit speed wrench attachment on a long shank Tee handle wrench. Many mechanics prefer this type of handle for use with this attachment even when there is sufficient space to use it with a speed wrench.

This attachment is so designed that both sockets are always rigidly held in line.

Note the design of the socket on the attachment is such as to permit its use where space is very limited.

#### No. 23 GARAGE SERVICE SET





PACKED IN PLAIN WOODEN CASE 201-2 x 7 x 6

No. 23 SET. WT. 34 LBS. PRICE \$22.00

The No. 23 Set replaces our No. 30 Set which has been sold for several years. After careful study of garage service stations in all parts of the country this new selection is offered to the trade. In this new line-up only the most popular sizes of speed wrenches are included. Particular attention has been paid to the selection of L type and double-end offset wrenches which have been found most useful for general garage service work.

DODGE

Each different wrench is fully illustrated and Offset wrenches.

described elsewhere in this catalog.

Garage owners will instantly recognize the Speed wrenches.

utility of this assortment.

binations.

These 23 wrenches, some with two or three Box type wrenches.

Socket sizes, make possible 38 different com-

 Offset wrenches
 17

 L-wrenches
 10

 Speed wrenches
 5

 Tee-flax wrenches
 2

 Tee-flex wrenches
 2

 Box type wrenches
 2

 Total
 38

# ADAPTIONS - NO. 23 SET

BUICK (continued)

DODGE	BUICK (continued)
Front Auto	
Front Axle	Rear Axle
Drag! ink	Differential support 653
Hub nut	Rear axle housing front1620-1020-2720
Spindle pivot	Rear axle housing rear 1020
Spring clips	Rear spring pivot
Spring shackles front 653-2418	Rear wheel to brake drum 5660
Spring shackles rear 653-2418	Spring clips 762
Steering arm 762	Spring shackles rear 495
Tie rod 651-2418	Universal joint housing
Tie rod clevis	
Rear Axle	Motor Unit
The state of the s	Connecting rod 651-2418
Differential support 653	Cover for timing gears
Hub nut	Crank case to base 6016
Rear axle housing front	Exhaust manifold to cylinder block .2418-6018
Rear wheel—hub flange	Fly-Wheel Housing 1018
Spring clips	Generator support
Spring shackles front 653-2418	Intake manifold to cylinder block 2418-6018
Spring shackles rear	Main bearing
oping shackies real	Motor support rear 5660-653
Made ulluid	Steering gear case cover
Motor Unit	Steering gear case support 653
Connecting rod 653-394	Tappet saddle strap 1018
Cover for timing gears 6016-395	Transmission cover
Crank case to base	Water cylinder inlet 2418
Cylinder head 752-6022	
Exhaust manifold to cylinder block 395-6018	
Fan adjustment 2720	
Fly-wheel housing	
Intake manifold to cylinder block 395	
Main bearing	
Motor support rear	
Transmission cover	
Water cylinder inlet	2110
Water pump 1013	Spring clips
mater pump	Steering arm
	Tie rod clevis
numarr .	2110-090
BUICK	
Front Axle	Rear Axle
Front wheel-hub flange 566	Differential case 2418-395
Hub nut 49.	5   Hub nut 5660
Spindle pivot	Rear axle housing front 2418-394
Spring clips 76	2 Rear axle housing split
Spring shackles front 566	Rear wheel to brake drum 2720
Spring shackles rear 566	0 Ring gear 6018-395
Steering arm 76	2 ISpring clips 200 204
Tie rod	8 Torque tube front
Tie rod clevis	0  Torque tube rear 2418-394
	200 D O
	250 P. C.

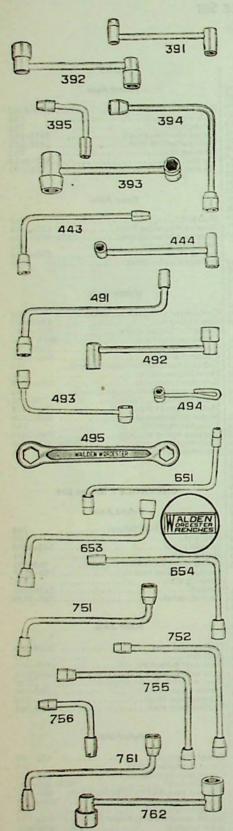
## CHEVROLET MODEL 490 (continued)

Motor Unit
Carburetor to intake manifold 395
Connecting rod
Cylinder head
Exhaust manifold to cylinder block 395
Fly-wheel to crank shaft
Generator support
Intake manifold to cylinder block 395
Main bearing 394-653
Motor support front 394
Radiator support
Starting motor support395
Transmission cover
Transmission support 394-2720
Wrist pin
Valve rocker arm support 395
CADILLAC
Front Axle
Front wheel—hub flange6022-5660
Spindle pivot
Spring shackles front
Tie rod
Tie rod clevis
Rear Axie
Brake support
Differential support
Rear axle housing front
Rear axle housing rear 1020-751 Rear wheel to brake drum 751
Spring clips
Spring perch to housing 395
Spring shackles rear 495
Spring shackles rear
Connecting rod
Cover for timing gears
Cover for timing gears
Cylinder head 6022–5660
Distributor housing 395
Distributor housing. 395 Exhaust manifold to cylinder block. 395
Fan housing
rly-wheel to crankshaft
Generator support
Heater to intake manifold 395-1620
Intake manifold to cylinder block 395-2418
Main bearing 394-5660
1 MOLOF SUPPORT FRONT
Oil pan drain plug. 762
Radiator support
Dieering gear case cover 395
Transmission bottom
Transmission cover395-6016-2716
Transmission support
Water pump drain

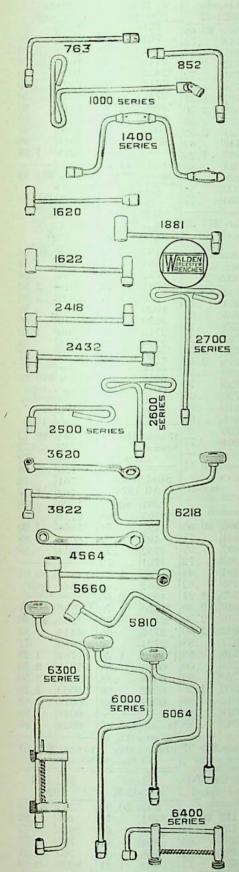
ADAPTIONS - No. 23 GARAGE SERVICE SET

A FEW OF THE MANY USES

The state of the s	NAME OF THE PERSON OF THE PERS	The state of the s
NASH (6)	OAKLAND MODEL 34-C (continued)	DORT
Front Axle	Motor Unit	Front Axle
Front wheel—hub flange 5660 Spring shackles front 5660	Connecting rod	Pront Axie
Spring shackles front	Cover for timing gears	Front wneel-hub flange5660-6022
Steering arm 762	Cylinder head	Hub nut
Tie rod 653	Exhaust manifold to cylinder block . 2418	Spring clips 751
Rear Axle	Cylinder head 6022-5600 Exhaust manifold to cylinder block 2418 Fly-wheel to crankshaft 2720-751 Fly-wheel housing 2720-1620	Spring clips         751           Spring shackles front         2418-653           Spring shackles rear         2418-653
Differential case 395	Generator support	Spring shackles rear
Rear axle housing rear 395	Intake manifold to cylinder block 24.8	Steering arm 762 Tie rod. 653-2418
Rear axle housing side	Main bearing	Tie rod clevis 751-395
Rear wheel—hub flange 5660-392	Motor support front	roc
Spring clips 5660	Motor support rear	
Spring shackles front 762	Starting motor support 2418	Rear Axle
Spring shackles rear 5660	Steering gear case support 1620	
Motor Unit	Transmission cover	Hub nut
Clutch plate	Transmission support. 751–2418 Water cylinder outlet 2418	Rear axle housing front
Connecting rod	ESSEX	Rear spring pivot
Cover for valve guides 395	Front Axle	Rear spring pivot
Crank case 6016	Drag link 5660-392	Spring shackles front 5660
Cylinder head	Front wheel—hub flange 752	
Exhaust manifold to intake manifold. 395	Hub nut	
Fan adjustment	Spring shackles rear	Motor Unit
Fly-wheel housing 1018-395	Steering arm ball 762	
Generator support 653	Tie rod 5660-392	Carburetor to intake manifold 395
Intake manifold to cylinder block 751 Main bearing	Tie rod clevis	Connecting rod. 752-5660 Cover for timing gears 395-6016
Motor support front 1020	Rear Axle Bearing adjustment	Crank case to base
Radiator support 1018	Rear axle housing front 752-395	Cylinder to base 1020-751
Starting motor support 751	Rear axle housing rear 752-395	Cylinder head
Steering gear case support. 653 Transmission cover. 395–1018	Rear wheel to brake drum 752	Exhaust manifold to cylinder block 395
Water cylinder inlet 395–2716	Rear wheel—hub flange	Fly-wheel housing 395 Generator support 395–6018
Water cylinder outlet 395	Spring shackles front 5660-653	Intake manifold to cylinder block 395
Water pump 395		Intake manifold to cylinder block
HUDSON	Motor Unit	Motor support front
Front Axle	Clutch housing	Radiator support
Spring shackles front	Clutch housing	Radiator support
Steering arm ball	Coverior valve ruides	Transmission cover
Tie rod 5660	Crank case to base	Transmission support 395
Tie rod clevis 5660-755	Cylinder head 751	
Rear Axle	Exhaust manifold to cylinder block. 395 Fan adjustment. 653	All the state of t
Bearing adjustment. 755-653 Differential case. 395-2418	Fly-wheel to crankshaft 755	OUTUPOLET M. L. DIL
Differential case	Main bearing 653-755	CHEVROLET Model BH
Rear axle housing front 395-752	Motor support front	Front Axle
Poor avia housing roof 395-6018	inotor papportramitition in the same	Front Axia
Rear wheelto brake drum. 752 Spring clips. 5660-653	Rocker arm cover	Front wheel—hub flange 755
Spring clips		Hub nut 762
Spring shackles rear	Transmission cover 395-2716	Spindle pivot
Motor Unit	Transmission support	Spring clips       394         Spring shackles front       392-394         Spring shackles rear       392-2418
Connecting rod	Water cylinder inlet	Spring shackles rear 392-2418
Cover for timing gears 2716-395	Front Axle	Steering arm 762
Crank case to base 0013-393	Shock absorber	Steering arm.     762       Tie rod.     2418-395       Tie rod clevis.     395-1620
Cylinder to base	Spring shackles front	Tie fou cievis
Fan adjustment 653-755	Ctearing arm 769	Charles of the Control of the Contro
Main bearing	Tie rod	Rear Axle
Motor support front	Tie rod clevis	567
Padiator support 392-5660	Redins rod 652	Differential case 2418-395
Starting motor support	Rear axle housing front 751-1020	Hub nut 769
Steering gear case support 000	Real axic neusing spite	Rear axle housing front 2418-394
Transmission support 653	Spring shackles	Rear axle housing split2418-395-6018 Rear wheel to brake drum2720
Water Cyminaer Camer.	Connecting red	Spring clips
OAKLAND MODEL 34-C	Cover for rocker arms 395	Torque tube front
Front Axle	Cover for timing cears 395-756	Torque tube rear 2418-394
Front wheel—hub flange	Crank case to base 6016-395 Cylinder head 6020-751 Exhaust manifold to cylinder block 395	
105	Cylinder head	Motor Unit
653_9418	Fan adjustment	motor office
Spring clips         2418-5660           Spring shackles front         2418-5660           Spring shackles rear         2418-5660	Fly-wheel to crankshaft 6018-395	Connecting red 651-395
Spring shackles rear		Cover for rocker arms 395
Tie rod 392-2418	Intake manifold to cylinder block 396 Main bearing	Crank case to cylinder block 395-752
Spring smackets real   762	Main bearing	Cylinder head
Rear Axle	Motor support rear	Exhaust manifold to cylinder block. 395-752 Fly-wheel to crankshaft 395-6018
To the street 5660	Oil pan395-6016-2716	Generator support
Rear axie housing rolling 1620-751	Radiator support 1018-395	Intake manuold to evinder block 395-752
Rear wheel to brake drum	Starting motor support	Main bearing 394-653
Spring clips	Steering gear case support	Motor support front
Spring clips         653-2418           Spring perch to housing         1220-751           Spring shackles front         762-392           Spring shackles rear         2418-5660	Water cylinder inlet 395	Transmission cover
Spring shackles rear	Water pump 1018	Water cylinder outlet 1620
278		



- 391 DOUBLE END OFFSET WRENCH. Length over all 8". Socket sizes 5%" and ½". Recommended specifically for use on: Chevrolet, Liberty.
- 392 DOUBLE END OFFSET WRENCH. Length over all 9½". Socket sizes ½". Recommended specifically for use on: Buick, Chandler, Chevrolet, Essex, G. M. C., Hudson, Oldsmobile, Republic, Scripps-Booth, Stewart, Stutz.
- 393 QUADRUPLE SOCKET OFFSET WRENCH. Length-over all 10½". Socket sizes ¼", 1½", ¾". Recommended specifically for use on: Chevrolet. Each 1.65
- 394 L TYPE WRENCH 8"x 8". Socket sizes 34" and 34". Recommended specifically for use on: Cadillac, Chandler, Chevrolet, Cleveland, Commerce, Dodge, Federal, Franklin, G. M. C., Haynes, Republic, Selden, Studebaker, Stutz.
- 295 L TYPE WRENCH 4" x 4". Socket sizes ½" and ¾". Recommended specifically for use on: Cadillac, Chalmers, Chandler, Chevro.et, Cleveland, Cole, Commerce, Dodge, Dort, Essex, Federal, Franklin, G. M. C., Grant, Haynes, Hudson, Hupmobile, International, Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Nash, Oldsmobile, Paige, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker. Stutz, White, Wills St. Claire, Winton.
- 443 L TYPE WRENCH 914" x 414". Socket sizes 1/8" and 1/2". Recommended specifically for use on: Buick, Cole, Lincoln. Each .72
- TRIPLE SOCKET OFFSET WRENCH. Length over all 9". Socket sizes 3\(\frac{1}{2}\)", \(\frac{1}{4}\)" and \(\frac{1}{3}\)". Recommended specifically for use on: Buick, Chandler, Dodge, Grant, Winton.
- 491 DOUBLE END OFFSET WRENCH. Length over all 10½". Socket sizes 1,7" and 34". Recommended specifically for use on: Chandler, Cleveland, Essex, Haynes, Maxwell, Pierce-Arrow, Selden, Studebaker.
- DOUBLE END OFFSET WRENCH. Length over all 814" Socket sizes 54" and 14" or 34". Recommended specifically for use on: International, Maxwell. Each .72
- 494 OFFSET WRENCH. Length over all 5½". Socket size ½". Recommended specifically for use on: Chalmers, Chandler, Chevrolet, Cole, Commerce, Federal, Ford, Franklin, Grant, Jordan, Marmon, Maxwell, Peerless, Pierce-Arrow, Republic, Selden, Stewart, Stutz, Wills St. Claire.
- DOUBLE END BOX TYPE WRENCH. Length over all 10". Socket sizes 114" and 14". Recommended specifically for use on: Buick, Chandler, Cleveland, Dodge, Dort, G. M. C., Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Oakland, Paige, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, White. Each .82
- DOUBLE END OFFSET WRENCH. Length over all 10". Socket sizes 1's and 1's". Recommended specifically for use on: Dodge, Pierce-Arrow, Stewart. Each .71
- 653 DOUBLE END OFFSET WRENCH. Length over all 11". Socket sizes 1/8" and 3/4". Recommended specifically for use on: Buick, Chandler, Cleveland. Cole, Dodge, Essex, Franklin, G. M. C., Grant, Hudson, Marmon, Mitchell, Oldsmobile. Paige, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Winton. Each .77
- L TYPE WRENCH 10" x 6". Socket sizes 1/2" and 116". Recommended specifically for use on Dodge.
- 751 DOUBLE END OFFSET WRENCH. Length over all 1134". Socket sizes \$\frac{6}{6}\text{"} and \frac{3}{2}\text{"}. Recommended specifically for use on: Cadillac, Cleveland, Essex. G. M. C., Haynes, Jordan, Nash, Reo, Willys Knight.
- 752 L TYPE WRENCH 8" x 8". Socket sizes %" and %". Recommended specifically for use on: Cole, Dort, Lincoln, Paige, Scripps-Booth, Stewart, Studebaker, Willys Knight.
- 755 L TYPE WRENCH 10" x 7". Socket sizes 56" and 34". Recommended specifically for use on: Dort, Essex, Franklin, Hudson, Hupmobile, Jordan, Lincoln. Mack, Peerless, Stewart, Willys Knight.
- 756 L TYPE WRENCH 4" x 4". Socket sizes ½" and ½". Recommended specifically for use on: Essex, Franklin, G. M. C., Hudson, Lincoln, Oldsmobile, Pierce-Arrow, Selden, Stutz, White, Wills St. Claire, Willys Knight.
- 761 DOUBLE END OFFSET WRENCH. Length over all 10½". Socket sizes ¾" and ¾". Recommended specifically for use on: Chalmers, Commerce, Dort, Jordan, Liberty, Mitchell, Nash, Oldsmobile, Overland, Pierce-Arrow, Scripps-Booth, Stewart, Studebaker, Willys Knight. Each .72
- 762 DOUBLE END OFFSET WRENCH. Length over all 10¾". Socket sizes 1 ¼" and 1". Recommended specifically for use on: Buick, Cadillac, Chalmers, Chandler, Cleveland, Dodge, Dort Essex, Federal, Ford, G. M. C., Haynes, Hudson Hupmobile, International, Jordan, Lincoln, Mack, Marmon, Maxwell, Mitchell, Nash, Oakland, Oldsmobile, Overland, Peerless, Pierce-Arrow, Reo, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Willys Knight, Winton.



763 L TYPE WRENCH 912" x 414'. Socket sizes 12" and 14". Recommended specifically for use on: Cole, Overland.

852 L TYPE WRENCH 6¼" x 6¾". Socket sizes ½" and ½". Recommended specifically for use on: Fordson Tractor, Paige, Studebaker. See Fordson Tractor wrenches illustrated elsewhere in this catalog.

1000 TEE FLEX AND UNIVERSAL JOINT SOCKET WRENCHES. See Tee Flex wrenches illustrated elsewhere in this catalog. Each 2.50

1400 See Tire and Rim wrenches illustrated elsewhere in this catalog. Each 1.10 SERIES.

TOMAHAWK. TRIPLE SOCKET WRENCH. This is the original Triple Sockets. The sockets are particularly shaped to increase their usefulness. 5%" end socket used for spinning nuts on and off. Socket sizes 5%" and ½". Recommended specifically for use on: Federal, Ford, Franklin, G. M. C., Haynes, Hupmobile, Jordan, Liberty, Mack. Marmon, Mitchell, Nash, Oakland, Oldsmobile, Overland, Paige, Peerless, Pierce-Arrow, Republic, Scripps-Booth, Selden, Stewart, Studebaker, Stutz, White, Willys Knight. Each .70

TRIPLE SOCKET OFFSET WRENCH. Length over all 9". Socket sizes 1/2" hex., 1/4" hex., 1/4" sq. Recommended specifically for use on Maxwell.

DOUBLE END OFFSET WRENCH. Length over all 9". Socket sizes 1".

hex., 16" sq. Used on Ford Cars.

Each 1.10

2418 DOUBLE END OFFSET WRENCH. Length over all 9". Socket sizes \*\*

Dodge, Dort, Federal, Ford, G. M. C., International, Liberty, Oakland, Paige, Pierce-Arrow.
Reo, Selden, Stewart, Studebaker, Wills St. Claire.

Each .80

2432 DOUBLE END OFFSET WRENCH. Length over all 1114". Socket sizes 1" and 34". Recommended specifically for use on: Buick, Peerless, Rec.

Each 1.05

2500-2600-2700 See Tee and Offset Handle Wrenches illustrated elsewhere in this catalog.

3620 COMBINATION SPARK PLUG AND CYLINDER HEAD WRENCH. Length over all 11". Socket sizes 14" and 56". Used on Ford Cars. Each .75

3822 FLY WHEEL SOCKET WRENCH. Socket size H". Used on Ford Cars. Each .66

4564 RATCHET WRENCH FOR ADJUSTING FORD BRAKE AND REVERSE TRANSMISSION BANDS. Opposite end 11" for use on slow speed connecting Used on Ford Cars.

TRIPLE SOCKET OFFSET WRENCH. Length over all 1014". Socket sizes 14", %" and 14". Recommended specifically for use on: Buick, Cadillac, Chalmers, Chandler, Cleveland, Commerce, Dodge, Dort, Essex, Federal, Ford, G. M. C. Haynes, Hudson, Hupmobile, International, Jordan, Liberty, Lincoln, Mack, Maxwell, Mitchell, Nash, Oakland, Oldsmobile, Overland, Pierce-Arrow, Reo, Republic, Selden, Stewart, Studebaker, White, Wills St. Claire, Willys Knight, Winton.

5810 CONNECTING ROD SOCKET WRENCH FOR FORD CARS. Particularly designed for reaching the fourth connecting rod. Used on Ford Cars. Each .55

6000 See Speed Wrenches illustrated elsewhere in this catalog.
SERIES.

SHORT SPEED WRENCH. Length over all 1334"; shank 5". Socket size 34". Recommended specifically for use on: Cole, Ford, International, Lincoln. Marmon, Mitchell, Oldsmobile, Overland, Wills St. Claire.

6218 LONG SHANK (20") BRACE SPEED WRENCH. Length over all 28". Socket size 4". Recommended specifically for use on: Buick, Cadillac, Cole, Ford. Stutz, White.

6300 See Nut and Bolt Speed Wrenches fully described elsewhere in this catalog. Each 3.00 SERIES.

6400 See Nut and Bolt Holding Attachment fully described elsewhere in this catalog Each 2.00 SERIES.

# WALDEN-WORCESTER SERVICE SELECTIONS

									'						
Buie		Char	ndler	Dodge	1921	Ford C	ar and	Hud	son-	Line	coln	Re	20	Stu	tz
4 and	16	(Conti	nued)	394	\$0.77	Tru		Essex	(1921)	192	1-22	(Conti		(Conti	nued)
	\$0.99	762	1.21	395	.66	VG2	\$0.88	392	\$0.99	*395	\$0.66	751	.72	*856	.99
†443	.72	1018	2.50	*444	.83	VG3	.55	*395	.66	443	.72	762	1.21	1018	2.50
†*444	.83	1024 2418	2.50	495	82	494	.44	491	.71	*495	.82	1104	. 99	1020	2.50
495	.82	2716	.80	*651	.71	762	1.21	*653	.77	752	.72	2418 *2432	.80 1.05	1028 1620	2.50
*653 762	1.21	*5660	1.20	*653	.77	1018	2.50	751	.72	*755	.72	2519	.50	2522	.50
1018	2.50	6016	.88	*654	1.72	1020	2.50	*755	.72	756	.66	2716	.60	2526	.50
1024	2.50			762 1016	$\frac{1.21}{2.50}$	*1620 1881	0.70	756 762	.66 1.21	762 1018	$\frac{1.21}{2.50}$	*5660	1.20	2716	.60
†2432	1.05	15 tools	\$15.68	1018	2.50	*2418	.80	1016	2.50	1020	2.50	6016	.88	2718	.60
2716	.60	*Owner's		2418	.80	2718	.60	1024	2.50	1024	2.50	6022	.88	6016	.88
2718	.60	(	(1920-21)	2716	.60	2720	.60	1028	2.50	2716	.60	6024	.88	6018	.88
†*5660	1.20	Chev	rolet	5660	1.20	3620	.75	2716	.60	*5660	1.20		212 50	6218	1.10
6016	.88	490-	BH	6014	.88	3822	.66	2718	.60	6018	88	Programme and the second	\$12.73		010 00
6018	.88	232	\$0.55	6016	.88	*4564	1.30	2722	.60	6020	.88	*Owner's	(T-U)	18 tools *Owner's	-
6020 6218	1.88	*391	.72	6018 6022	.88	*5660	1.20	2724	.60	6022	.88	Scri	pps-		-G-H-K)
0218	1.10	*392	.99	6022	.88	*5810	. 55	*5660	1.20	6064	.77	Boo		_	
16 tools	\$17.53	*393	1.65	6025	.88	6018 6020	.88	6016 6018	.88	16 tools	210 99	B39-		Wi	
*Owner's		*394	.77	- 0020	.00	6022	.88	6025	.88	*Owner's		392	\$0.99	St. C	laire
†Owner's		*395	.66	19 tools	\$19.37	6064	.77	6028	.88	The state of the state of	1921-22)	*395	.66	192	
		494 1104	.44	*Owner's		6218	1.10	20 tools	\$21.06			495	.82	*395	
Cadi		01516	.77	- n	_	6316	3.00	*Owner's	(1921)		mon	*653 *752	.77	*494	.44
51 to	59	2418	.80	Do	rt	6318	3.00				0-21	*761	.72 .72	756 1018	2.50
	\$0.77	2716	.60	11-15-1		02 40010	\$26.85	Hupmo		*395		*762	1.21	1018	2.50
*395	.66	2718	.60	116	\$0.33	*Owner's		*395		494	.44	1020	2.50	*2418	.80
*751	.72	2720	.60	122	.44		Selection	*755	.72	495	.82	1620	.70	2519	.50
*762	1.21	2722	.60	232 *395	.55	Fran	nklin	762	1.21	*653	.77	2716	.60	*5660	1.20
1022	2.50	0010		495	.82	1917	1920	1016 1018	$\frac{2.50}{2.50}$	*762	$\frac{1.21}{2.50}$	2718	.60	6016	.88
*5660	1.20	0010		716	3.30	394	\$0.77	1018	2.50	1016 1018	$\frac{2.50}{2.50}$	2720	.60	6064	.77
6018 6020	.88	6024	.88	752	.72	*395	.66	*1620	.70		2.50	2722	.60		
6022	.88		212 20	755	.72	494	.44	5660	1.20	*1620	.70	6016		10 tools	
6218	1.10		\$13.38	*761	.72	*653	.77	6016	.88	2720	.60	6018	.88	*Owner's	(1921)
		Owner :	(490-BH)	762	1.21	*755	.72	6024	.88	6016	.88	6020 6022	.88	Will	vs-
10 tools	\$10.80			1018	2.50		.66	10 tools	\$13.75	6018	.88	0022	.00	Knight	
*Owner's	3	Cleve		1020	2.50	1016	2.50	*Owner		6020	.88	17 tools	\$15 01	*751	\$0.72
(	51 to 59)	1920		1104	.99	1018	2.50	Jore		6064	:77	*Owner's		*752	.72
Chalı	mare	394	\$0.77	1139 *2418	.55 .80	01516	.77	_			010 11		339-F43)	755	.72
C-a		*395		2716	.60	1620 2716	.70	*395 494		14 tools		G. 1.		*756	.66
224		491 495		2718	.60	2718	.60	495	.82	*Owner's	1920-21)	Stude		*761	.72
*395	.66	*653		*5660		6016	.88	751	.72		1920-21)	All	-	762	1.21
494	.44		.72		.88	6018	.88	755	.72	Maxw	ell 25		\$0.77	1620	.70
. 716	3.30				.88	6019	.88	*761	.72			†*395 491	.66	2718 *5660	1.20
*761	.72	1016	2.50	6024	.88	15 tools	\$14.33	762	1.21	*491	.71	495	.82	6016	.88
*762	1.21	1018		21 tools	\$21.85	*Owner's	3	1020		*492	.99	†752	.72	6018	.88
1018	2.50			1		(19	917-1920)	1620			.72	†761	.72		
1022	2.50				-17-17A)	Gr	ant	2718		101	.44	762		11 tools	\$9.01
1139					sex-		IX	2728		1 700	.82	†852	.82	*Owner's	(1921)
2522 2716				Hudeo	n'19'21		\$1.65	*5660 6016		102	1.21	1024	2.50		1001
2718			.88		\$0.99	*395				1 2010	2.50	*1620	.70		
2720	.60		.00	*395					.88	1018 1022			.80		\$0.66
2722			\$17.52	491	.71	494	.44		2.00	*1622	2.50 .88		.60		.83
*5660	1.20	*Owner'		*653			.77	16 tools	\$15.53		.60		1.20		1.21
6016	.88	Colo	(1921)	*751		1018	2.50	*Owner	's (M)	2718			.88	1018	2.50
6018		600								2720			.88	1024	2.50
6022									erty	5660			88	*5660	1.20
6024	.88	*492							0C	6016	.88	6024	.88	6016	.88
19 tools	210 04	1 410.			2.50	1	\$9.49	391 *761		0010	.88			6018	.88
*Owner's		653		1028	2.50		's (HX)	1020		6022	.88	18 tools		6022	.88
Owners	s (C-00)	752					nes 50	1022	2.50			*Owner's	(Lt. 6)		
Char		763	.72	2718	.60	394	\$0.77	*1620		10 00015	\$19.57	†Owner's	Big (Big	10 tools	
1920	0-21	1018	2.50	2722	.60	*395	.66	*2418	.80	*Owner'	8 (25)	and	Spec. 6)	*Owner's	(1921)
392	\$0.99	1024			.60	*491	.71	2519		Reo C	ar T-II	St	utz	Mit	chell
394	.77	2619				751	.72	2525	.50		Speed	S-G-	H-K		20
*395	.66	2724					1.21	2716	.60	Wag	on F		\$0.99	*395	
*444				6018						112	\$0.33	*394	.77	495	
491	.71			6025					1	- 120	.44		.66		.77
494	.44	6218		6028			.88	6020	.88	*205	.66		.44		.72
495 *653	.82	*O	0 (1001)	20 tools	521.06	8 tools	\$6.85	12 tools	\$12.50	495	.82	756	.66	762	1.21
000	.11	-Owner	8 (1921)	*Owner'	s (19-21)	1 *Owne	r's (50)	*Owner	's (10C)	653	.77			1020	2.50

### WALDEN-WORCESTER SERVICE SELECTIONS

(CONTINUED)

Land Control of the land of th	The Laboration						
Mitchell	Oakland	Paige	Pierce-Arrow	Commerce	G. M. C.	Mack	Selden Truck
(Continued)	(Continued)	(Continued)	(Continued)	Truck-	Truck	Truck	(Continued)
		27181 .60	761 .72	T	31-41-	AB-AC	495 .82
*1620 .70	6018 .88	6016 .88	†*762 1.21		K101		756 .66
2724 .60	6022 .88	6018 .88	1010 0 50	394 80.77		395 \$0.66	762 1.21
*5660 1.20		0010 .00	1018 2.50	395 .66	392 \$0.99	495 .82	1024 2.50
6016 .88	11 tools \$11.07	00 20	1020 2.50	494 .44	394 .77	755 .72	1028 2.50
6020 .88	*Owner's (34C)	11 tools \$9.30	1028 2.50	761 .72	395 .66	762 1.21	1620 .70
6064 .77	Owner's (34C)	*Owner's (1921)	†*1620 .70	1018 2.50	495 .82	1018 2.50	2418 .80
0001			2418 .80		653 .77	1020 2.50	7000 1 00
12 tools \$11.71	Oldsmobile	Peerless	2716 .60			1024 2.50	5660 1.20
	37	Series 6	2718 .60	5660 1.20	751 .72	1028 2.50	6016 .88
*Owner's (1920)		Series 0.	2720 .60	6018 .88	756 .66	1620 .70	6018 .88
	392 \$0.99	*395  \$0.66	2724 .60		762 1.21	5660 1.20	6020 .88
	*395 .66	494 .44	*5660 1.20		1018 2.50	6018 .88	6024 .88
Nash	653 .77	*653 .77	6016 .88		1024 2.50		6026 .88
4 and 6	756 .66	755 .72	6018 .88		1620 .70		
	*761 .72	752 1.21			2418 .80	6024 .88	17 tools \$17.37
*395 \$0.66	*762 1.21	1018 2.50	6020 .88		2720 .60		
751 .72	1016 2.51	1020 2.50			2724 .60	13 tools \$17.95	Stewart
*761 .72	1020 2.50	1024 2.50		8 tools   \$9.67	5660 1.20		Truck
762 1.21	1620 .70				6016 .88	Republic	12-9-7-11
1016 2.50	2716 .60	1020			6018 .88	Truck	7x-10
1018 2.50	2718 .60	-10- 1.00		Federal	0010	10-19A	392, \$0.99
1020 2.50	0700 60	2020 .00		Truck	1000	392  \$0.99	395 .66
1024 2.50	2120 .00	2110 .00	*Owner's (32)	SD-TE-		394 .77	494 .44
1620 .70	3000 1.20	2120 .00		UE-WE		395 .66	
*5660 1.20	0010 .88	00.0		The second secon		494 .44	495 .82
6016 .88	6018 .88			394 \$0.77		495 .82	651 .71
6024 .88	6020 .88	6020 .88		395 .66			752 .72
.00	6022 .88	100 100 100 100 100 100 100 100 100 100	(4)	494 .44	17 tools \$17.26		755 .72
12 tools \$16.97	6064 .77	16 tools \$17.39	*761  \$0.72	762 1.21		762 1.21	761 .72
			*762 1.21	1024 2.50		1028 2.50	762 1.21
*Owner's (4 & 6)	18 tools \$18.00	*Owner's	*700 70	1028 2.50		1620 .70	
	*Owner's (37)	(Series 6)	1018 2.50		Trucks-L	5660 1.20	1021 2.00
	Owner's (37)		1020 2.50			6016 .88	1028 2.50
Oakland	unitarial	Pierce-Arrow	1620 .70		393 50.00	6018 .88	1620 .70
34C	Paige	Truck-(X5-	2718 .60		493 .12		2418 .80
1051 00 00	1001	R10 and Car		6018 .88	102 1.21	12 tools \$11.82	2525 .50
495 \$0.82		20 20	*5660 1.20	0010 .00	2410 .00		5660 1.20
762 1.21	393 \$1.65		6016 .88	6020 .88	5660 1.20	Selden Truck	6016 .88
1018 2.50			6018 .88	6024 .88	6016 .88	1½A 3½A	6018 .88
*1620 .70					6064 .77	1½A 3½A 2½A 5A	6020 .88
*2418 .80		*494 .44		CONTRACTOR OF THE PARTY OF		204 20 77	6000 .00
2718 .60	*752 .72	495 .82	a little to the			394 \$0.77	6022 .88
2720 .60				-		395 .66	6024 .88
*5660 1.20			12 tools \$13.56			491 .71	6026 .88
6016 .88			*Owner's (4)	13 tools \$14.30	7 tools \$6.24	494 .44	22 tools \$22.97
-0010	2110 .00	1 1001 .00	0.1110.0 (1.7				The late of the la

# SERVICE AND OWNERS' SELECTIONS

The charts show suggested selections of stock tools which are especially adapted for use on the various makes of cars as listed. The selections are grouped in two classes; the tools as listed being recommended for service station and garage mechanic's use, while the numbers prefixed by an asterisk represent the most useful tools for use by the car owner.

Owners of motor cars and trucks are entitled to real service.

Manufacturers of motor vehicles are increasingly impressed with the value of service and positive need for improvement. Co-operating with factory service departments, Walden-Worcester, Inc., have been able to select from their complete line certain wrenches best suited for work on certain cars.

The Service Selections tell you the particular part of the particular car you are interested in.

Proper tools are recognized as essential for good service, both for economy of time and character of the work done.



# WALDEN - WORCESTER WRENCHES

NO. 80 DISPLAY AND STOCK SET

These free Display Boards have wooden backs. the front is of sheet metal handsomely lithographed in black and golden rod, the hooks are held by nut and check nut and there is no possibility of the board warping out of shape. An ornament to any store and a valuable sales producer.

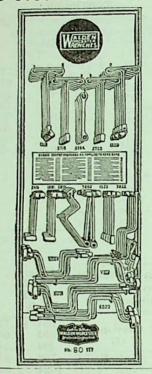
### NO. 80 Display and Stock Set

5	VG2	.SS	\$4.40
5	VG3	.55	2.75
5	1018	2.50	12.50
5	1020	2.50	12.50
5		.70	3.50
5	1881	1.10	5.50
5	2418	.80	4.00
555555555555	2718	.60	3.00
5	2720	.60	3.00
5	3822	.66	3.30
- 5	4564	1.30	6.50
5	5660	1.20	6.00
5	5810	.55	2.75
5	2010	.88	4.40
0	6018		
9	6020	.88	4.40
5	6064	.77	3.85
so	Wrenches	Total,	\$82.00
Box	ard and Hool	ks (crated)	50 lbs.
		d for shipment)	103 lbs

Size of Board, 6 ft. x 2 ft. 80 Wrenches Complete with Display Board

Code CHESTER 80 Set

Wrenches (net weight)



# NO. 85 SET-FOR FORDSON TRACTOR

856 851

856

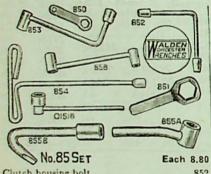
856

854

856 856 852

85 lbs.

\$82.00



Clutch housing bolt
Clutch lever bracket bolt
Clutch shaft nut
Connecting rod cap bolt nut
Crank case bolt
Crank case bolt
Crank shaft bearing cap bolt nut
Main bearing nut
Cylinder front cover bolt
Cylinder front cover cap screw
Cylinder head cap screw
Dash cap screw

Dash cap screw
Differential housing bolt
Differential housing
Exhaust tube bracket bolt Differential housing
Exhaust tube bracket bolt
Fan adjusting nut and screw
Foot bracket cap screw
Front wheel spindle nut
Fuel tank strap nut
Gear shifter plate cap screw
Radiator connection bolt
Radiator connection bolt nut
Radiator cover bolt
Radiator tooy tank cap screw
Radiator tank bolt
Radiator tot tank bolt nut
Radiator tot ptank cap screw
Radius rod bolt nut
Rear axle housing cap screw
Rear axle split
Rear wheel hub cap screw
Steering arm ball nut
Steering shaft nut
Steering shaft nut
Steering shaft nut
Transmission housing bolt nut
Transmission bousing cap screw
Transmission bousing cap ecrew
Transmission bousing plate cap screw
Transmission bousing plate cap screw
Transmission oil plug

Transmission oil plug

B50 Double End Box Type Wrench. Length over all 5". Socket size it of the fan adjustment, the other end fits the adjusting screw.

851 Single End Box Type Wrench.
Length over all 8%". Socket size
13i". Fordson Tractor owners and mechanics
will recognize this wrench as one particularly
designed to adjust or remove the clutch shaft
nuts.

852 L Type Wrench 64" x 64". Socket sizes 36" and 7". Particularly designed for use on: Motor Unit: Clutch housing, exhaust tube bracket and radiator tank.

Double End Offset Wrench. Length over all 9" x 4\". Socket sizes \"s\" sq. and \"h\" hex. Used on: Rear Axle-Rear axle housing; Motor Unit—Crank shaft bearing or main bearing and transmission draw bar; Miscellaneous—Dash support.

854 Tee Handle Wrench. Shank 15". Handle 8". Socket size \( \frac{1}{2} \)". A heavy type Tee handle wrench, manufactured especially for use on: Motor Unit—Gear shifter plate, radiator top tank: Miscellaneous—Foot brake.

Also very useful where a heavy type Tee Handle wrench is required with a \( \frac{1}{2} \)" hex. opening 856 856 856 855-B 852 850

ing.

855A Single End Offset Wrench. Length over all 9¼". Socket size 1¼". Used on: Front Axle—Front wheel spindle and steering arm; Rear Axle—Rear wheel hub cap; Miscellaneous—Seat spring. Used in combination with No. 855B for additional leverage. This gives an over all length of 18".

852 854 01516 855B

855B Hook End Extension. Length over all 94". This is an extension for 855A to be used for additional leverage. The hook is used in prying apart the rear axle bousing after the cap screws have been removed.

## DIRECTORY OF WRENCHES FORD CAR

Name of Part

### FRONT AXLE

Wrench

Ball socket	6018-2418
Front radius rod	5660
Front Spring clip	2418
Front spring hanger	5660
Front spring perch	5660
Spindle bolt	5660
Spinde bolt nut	2418
Spindle connecting rod	5660
Steering yoke clamp	2418

### REAR AXLE

Axle housing	6064-1620
Brake shoe support	1620-2418
Differential case	2418
Differential drive gear	1620-6064
Drive shaft roller bearing	2720-1620
Hub nut	5660
Radius rod	5660
Rear spring clip	5660
Rear spring hanger	5660
Rear wheel to brake drum	5660

### MOTOR

Carburetor flange	
(On cars without self starter	) 1018
Commutator case support	6018-2718
Commutator case support	
(On cars with self starter)	6020-2720
Connecting rod	1020-5810
Crank case	6018-2718
Crank case arm	2418
Crank case lower cover	1620-6064
Crank shaft bearing	1881-2418
Cylinder cover	6018-2718
Cylinder cover	0010 2110
(On cars with self starter)	6020-2720
Cylinder head	6020-1020-1620
Cylinder valve cover	1018
Fan adjustment	6018-2718
Fan bracket	2418
Fly wheel	3822
Inlet and exhaust clamp	1018-2418
Magnet	6018-2718
Motor support, front	6020-1621
Piston pin locking screw	1880
Radiator support	2718-2418
Valves	VG-2 VG-3
	1020-1620
Water cyl. inlet conn.	
Water cyl. outlet conn.	1620

### STEERING ASSEMBLY

Steering pos Steering tub	2418 6064

### TRANSMISSION

Brake adjustment	4564
Brake and reverse support	2418
Clutch pedal support	2418
Controller shaft, bracket	2418
Clutch pedal support Controller shaft, bracket Hub brake rod support	1620
Reverse adjustment	4564
Transmission cover	6018
Universal ball cap	1018-2718-2418

### MISCELLANEOUS

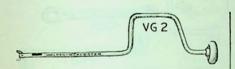
Body bracket Dash bracket to dash Front fender iron Muffler Running board Running board to fender	5660
Dash bracket to dash	1620-6064
Front fender iron	2418
Muffler	1620-6064
Running board	1881
Running board to fender	1881

### FORDSON TRACTOR (Continued)

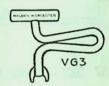
O1516 Single End Offset Wrench. Length over all 10". Socket size "his". Used on: Rear Axle—Radius rod: Steering Assembly-Steering arm, steering shaft nut and steering wheel. This is one of the wrenches in the No. 85 Set for the Fordson Tractor.

# WALDEN-WORCESTER WRENCHES

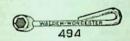
# SERVICE WRENCHES FOR FORD CARS



VG2 Long Shank Brace Grinder Wrench. Some garage men prefer the brace grinder in place of short grinder VG3. Fork end flexible and will reach all valves including one under dashboard. Each .88



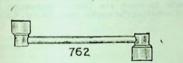
VG3. Short Valve Grinder Wrench. The original wire handle valve grinder redesigned with %" bar handle which swivels on cone bearing. The fork end fits the head perfectly.



Single Socket Offset Wrench. Length over all 51/8". Socket size 494

Length over ". Used on: Crank case lower cover Differential drive gear Rear axle housing.

Each .44



Double Socket Offset Wrench, Length over all 1034". Socket Rear spring perch TRUCK Rear spring perch TRUCK

Rear spring clip

Each 1.21



1018 "Tee Flex" or Universal Joint Wrench. Length over all 1314".
Socket size 4". Used on: Carburetor flange (On cars without self starter)
Commutator case support Cylinder valve cover Inlet and exhaust clamp Universal ball cap

Each 2.50

1020 "Tee Flex" or Universal Joint Wrench. Length over all 131/4".

Socket size %". Especially adapted for use on the Fourth Connecting Rod. Used on: Connecting rod Cylinder head Water cylinder inlet connection

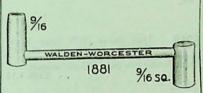
Each 2.50



1620 Tomahawk Triple Socket Wrench. Socket sizes 5%" and ½". This is the original Triple Socket Wrench, trademark "TOMAHAWK," having ½" rod connecting the two sockets. Used on: the two sockets. Used on:
Axle housing
Brake shoe support
Crank case lower cover
Cylinder head
Dash bracket to dash
Differential drive gear
Drive shaft roller bearing
Mater support from

Motor support, front
Muffler
Water cylinder inlet connection
Water cylinder outlet connection

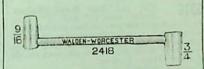
Each .70



1881 Double End Offset Wrench.
Length over all 9". Socket sizes.
Crank shaft bolt
Piston pin
Locking serve

Locking screw Running board Running board to fender

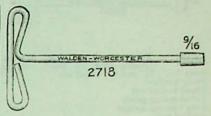
Each 1.10



2418 Double End Offset Wrench Length over all 9". Socket sizes Brake and reverse support Brake shoe support Clutch pedal support Crank case arm Crankshaft bearing nut Crankshaft rear bearing bolt Dash bracket to dash Differential case Fan bracket Front fender iron Front spring clip Inlet and exhaust clamp Radiator support Inlet and exhaust clamp Radiator support Spindle bolt nut Steering post bracket Steering yoke clamp Universal ball cap TRUCK Rear axle housing, front Rear axle housing, rear

Each .80





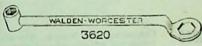
2718 Tee Handle Wrench. Handle 6", Socket 7". Used on: Crank case Cylinder cover Fan adjustment Magnet

Radiator support Universal ball cap

Each .60

2720 Tee Handle Wrench. Handle 6". Shank 12". Socket %". Used on Commutator case support (On cars with self starter).

Cylinder cover (on cars with self starter) Drive shaft roller bearing



3620 Spark Plug and Cy inder Head Wrench. Length over all 11".

Socket sizes \(\frac{1}{4}\)" and \(\frac{5}{8}\)". The \(\frac{1}{4}\)" hex. type opening has been so designed as to fit down squarely on the spark plug which is not true using usual claw or open end type.

The \(\frac{5}{4}\)" socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models. Used on:

Cylinder head Spark plug
Water cylinder inlet
Water cylinder outlet

Each. 75



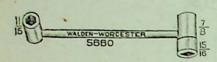
3822 Socket size ¼" hex. Used on fly wheel cap screws, heretofore considered an impossible place for a socket wrench. An ugly place made accessible, Each .66



4564 Ratchet Wrench. ½" hex. opening. Particularly designed for use on the Ford brake and reverse transmission bands. Opposite end "" for use on slow speed connecting lock nut. One of the most valuable tools to an owner on account of the ease in taking up bands.

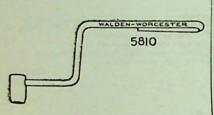
Each 1.30

# WALDEN-WORCESTER WRENCHES SERVICE WRENCHES FOR FORD CARS

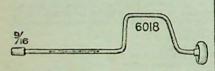


Triple Socket Offset Length over all 10½". ½" and ¼" Used on: 5660 Wrench. Socket Joou Length over sizes 1445', 36" and 144" Us Body bracket Front radius rod Front spring perch Front spring hanger Radius rod Rear hub nut Rear spring langer Rear wheel to brake drum Spindle bolt Spindle connecting rod Spindle connecting rod TRUCK Brake support Rear axle housing split Rear spring hanger

Each 1.20



Connecting Rod Wrench. Fits all connecting rod cap nuts. Includes the fourth connecting rod. This is an original design, the first wrench made to reach the fourth connection without removing the engine from the car. Be sure you get the wrench with all right angle bends and loop handle. No. 5810 stamped on handle. Each .55



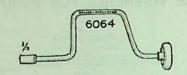
6018 Long Shank (11") Brace Speed Wrench. Length over all 1914". Commutator case support Crank case Cylinder cover Fan adjustement Fan adjustment Magnet Transmission cover

Each .88

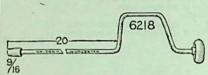
Long Shank (11") Brace Speed Wrench. Length over all 1914".

Socket size 54". Used on:
Commutator case support (on cars with self starter) cover (on cars with self starter) Cylinder head Each .88

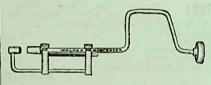
6022 Long Shank (11") Brace Speed Wrench. Length over all 1944". TRUCK Rear axle housing split



Socket size ½". Used on:
Crank case lower cover
Differential driver Differential drive gear Muffler Rear axle housing Steering tube flange Each .77



6218 Long Shank (20") Brace Speed Wrench. Length over all 28". Socket size %". Used on: Front Fender iron (side) radiator support. Each 1.10

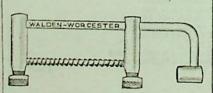


Ford mechanic who sees this bolt and nut speed wrench, will immediately recognize its usefulness in splitting the rear axle housing on the Ford car. With this wrench one man can do the work of two. Used on:

Rear axle housing bolt and nut

Each 3.00

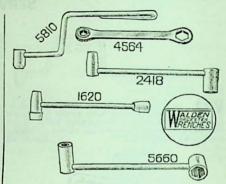
6318 Nut and Bolt Speed Wrench.
Length over all 20%". Socket sizes
he" and he". Used on:
Ball socket, bolt and nut
Crank case arm, bolt and nut (side)
Muffler support, bolt and nut
Steering post bracket, bolt and nut
Steering yoke clamp, bolt and nut
Transmission cover, bolt and nut Each 3.00



ace Speed all 1944".

connection with either the brace speed wrenches (6000 series) or the long shank Tee handle of 16418-14".

Each .88 6418-14".



No. 57 SET - FORD CAR

Weight 5.22 lbs. Price 4.55

Tomahawk. Triple socket Wrench. Socket sizes %" and ½". This is the original Triple Socket Wrench, trademark "TOMAHAWK." Will fit the collowing: Axle housing bolt and nut, Brake shoe support bolt, Cylinder head cap screw, Dash bracket to dash bolt and nut, Drive shaft roller bearing, stud nut, Water cylinder inlet connection cap screw, Water cylinder outlet connection cap screw.

5010 Connecting Rod Wrench. This is an original design, the first wrench made to reach the fourth connection without removing the engine from the car. Each .55

Ratchet Wrench 11/16" hex. opening for use on the Ford brake and reverse transmission bands. Opposite end 15/16" for use on slow speed connecting lock nut and also CHAMPION X Spark Plugs.

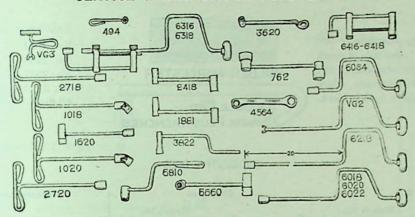
Each 1.30

Triple Socket Offset Wrench. Socket sizes 15/16", 1/8" and 11/16". Length over all 101/2". Will fit the following: Body bracket connecting bolt and nut, Frontradius rod nut, Frontspring perch nut, Front and rear spring hanger nut. Hub bolt and nut, Radius rod bolt and nut, Rear spring clip nut, Spindle bolt with oiler, Spindle connecting rod bolt with oiler, Spindle connecting rod bolt nut. Each 1.20

Double Socket Offset Wrench. Socket sizes %6" and 34". Length over all 9". Will fit the following: 2418 over all 9". Will fit the following:
Brake reverse support bolt and nut, Brake shoe support bolt, Clutch pedal support bolt and nut, Crank case arm bolt and nut (side), Crank case arm bolt and nut (top), Crankshaft bearing bolt nut, Crankshaftrear bearing lclf, Dash bracket to Dash bolt and nut, Differential case stud nut, Fan bracket bolt, Front ender iron bolt and nut (bottom), Front spring clio nut, Inlet and Exhaust clamp stud nut, Sprindle bolt nut, Steering post bracket bolt and nut, Steering yoke clamp bolt and nut, Universal ball cap, bolt and nut, Universal ball cap screw.

# WAI DEN-WORCESTER WRENCHES

### SERVICE WRENCHES FOR FORD CARS



VG2 Long Shank Brace Grinder Wrench. Some garage men prefer the brace grinder in place of short grinder VG3. Fork end flexible and will reach all valves including one under dashboard.

Crankshaft rear bearing bolt Dash bracket to dash Differential case end flexible and will reach all valves including Fan bracket Each .88

VG3
Short Valve Grinder Wrench. The original wire handle valve grinder redesigned with %8" bar handle which swivels on cone bearing. The fork end fits the head perfectly.

Each .55

Single Socket Offset Wrench, Length over all 51/8". Socket size 494

Length over 1/2". Used on: Crank case lower cover Differential drive gear

762 Double Socket Offset Wrench.
Length over all 1034". Socket
Rear spring perch
TRUCK:
Rear spring

Rear spring clip Each 1.21

1018 "Tee Flex" or Universal Joint Wrench. Length over all 13¼". Socket size 16". Used on: Carburetor flange

Carburetor flange
(On cars without self starter)
Commutator case support
Cylinder valve cover
Inlet and exhaust clamp
Universal ball cap

1020 "Tee Flex" or Universal Joint Wrench. Length over all 1314".
Socket size \$\frac{5}{4}\". Especially adapted for use Connecting rod Cylinder hand Each 2.50

Cylinder head Water cylinder inlet connection Each 2.50

Tomahawk Triple Socket Wrench.
Socket sizes ½" and ½". This
is the original Triple Socket Wrench, trademark
"Tomahawk," having ½" rod connecting the
two sockets. Used on:

two sockets. Used on:
Axle housing
Brake shoe support
Crank case lower cover
Cylinder head
Dash bracket to dash
Differential drive gear
Drive shaft roller bearing
Motor support, front
Muffler Muffler

Water cylinder inlet connection Water cylinder outlet connection

Double End Offset Length over all 9". So Crank shaft bolt Pisten view. et Wrench. Socket sizes,

Crank shalt bolt Piston pin Locking screw Running board Running board to fender Each 1.10

2418 Double End Offset Wrench.
Length over all 9". Socket sizes
ye" and ye". Used on:
Brake and reverse support
Brake shoe support
Clutch pedal support
Crank case arm Crank case arm Crankshaft bearing nut

Front fender iron
Front spring clip
Inlet and exhaust clamp
Radiator support
Spindle bolt nut
Steering post bracket
Steering yoke clamp
Universal ball cap
TRUCK:
Rear axle housing, front
Rear axle housing, rear

2718 Tee Handle Wrench. Handle 6", shank 12". Socket 1". Used on: Crank case Cylinder cover Fan adjustment Magnet Radiator support Universal ball cap Each .60

Tee Handle Wrench. Handle 6", shank 12". Socket 5%". Used on: 2720

Commutator case support
(On cars with self starter)
Cylinder cover (on cars with self starter)
Drive shaft roller bearing
Each .60

3620 Spark Plug and Cylinder Head Wrench. Length over all 11".

Socket sizes \{\frac{1}{2}\times \text{and } \frac{5}{2}\times.\ The \{\frac{1}{2}\times \text{hex. type} \text{opening has been so designed as to fit down squerely on the spark plug which is not true using usual claw or open end type.

The \(\frac{5}{2}\times \text{socket has been shaped to make it possible to take all cylinder head cap screws, even the two under the dash on latest models. Used on:

Cylinder head Spark plug

Water cylinder inlet

Water cylinder outlet

Each .75

3822 Socket size When. Used on fly wheel cap screws, heretofore considered an impossible place for a socket wrench. An ugly place made accessible.

wrench. An ugly place made accessible.

Each .66

Ratchet Wrench. H' hex. opening. Particularly designed for use on the Ford brake and reverse transmission bands. Opposite end H' for use on slow speed connecting lock nut. One of the most valuable tools to an owner on account of the ease in taking up bands.

Title Sechet Officer Western

Triple Socket Offset Wrench. Length over all 10½". Socket sizes 18", 78" and Body bracket Front radius rod

Front radius rod
Front spring perch
Front spring hanger
Radius rod
Rear hub nut
Rear spring clip
Rear spring lop
Rear spring banger
Rear wheel to brake drum
Spindle bolt
Spindle connecting rod

TRUCK: Brake support Rear axle housing split Rear spring hanger

Fach 1.20

Each .88

Rear spring hanger Each 1.20

5810 Connecting Rod Wrench. Fits all connecting rod cap nuts. Includes the fourth connecting rod. This is an original design, the first wrench made to reach the fourth connection without removing the engine from the car. Be sure you get the wrench with all right angle bends and loop handle. No. 5810 stamped on handle. Each .55

6018 Long Shank (11") Brace Speed Wrench. Length over all 1934". Socket size 4.". Used on: Commutator case support Crank case
Cylinder cover Fan adjustment

Fan adjustment Magnet Transmission cover

6020 Long Shank (11") Brace Speed Wrench, Length over all 1914". Socket size 54". Used on: Commutator case support (on cars with self

starter)
Cylinder cover (on cars with self starter)
Cylinder head
Each .83

6022 Long Shank (11") Brace Speed Wrench. Length over all 1914". Socket size 14". Used on: TRUCK Rear axle housing split Each .88

6064 Short Shank (5") Brace Speed Wrench. Length over all 133%".
Socket size 1-6". Used on: Crank case lower cover Differential drive gear Muffler Rear axle housing Steering tube flange Collaboration.

6218 Long Shank (20") Brace Speed Wrench. Length over all 28". Socket size 16". Used on: Front fender iron (side) radiator support Each 1.10
6316 Nut and Bolt Speed Wrench. Socket sizes 19" and 19". Any Ford mechanic who sees this bolt and nut speed wrench, will immediately recognize its usefulness in splitting the rear axle housing on the Ford car. With this wrench one man can do the work of two. Used on:
Rear axle housing bolt and nut Each 3.00
COLO Nut and Bolt Speed Wrench

6318 Nut and Bolt Speed Wrench Length over all 2034". Socket sizes 14" and 14". Used on: Ball socket, bolt and nut (side) Muller support, bolt and nut (stering post bracket, bolt and nut Steering yoke clamp, bolt and nut Transmission cover, bolt and nut Each 3.00

6416 Nut and Bolt Holding Attachment.
This attachment may be used in connection with either the brace speed wrenches (6000 series) or the long shank Tee handle wrenches (2700 series).

# WALDEN-WORCESTER WRENCHES

### DOUBLE END SPARK PLUG WRENCHES

Pressed Steel. Case-hardened—two sizes in one. 1/64" over size of spark plug, which prevents stretching and gives better outside clearance where plugs set in port plugs or deep in block.



No. 2931 7/8"-15/16" No. 2933 7/8"-1" No. 2937 7/8"-1-1/8" No. 3137 15/16"-1-1/8" All Sizes, Each .45

### SUGGESTIVE USES

A. C.		Champion		Mosler (continued)			
No. Size 1st 2: Hex Choice Ch SAET 7/8" 2931 29 SAELT 7/8" 2931 29 12-LT 7/8" 2931 29 12-LT 15/16" 2931 31 12-ACTP 15/16" 2931 31 12-LACTP 15/16" 2931 31 18-MT 1" 2933 18-SACA 1" 2933 18-SMT 1" 2933 78-DT 1-1/8" 3137 29 78-LBT 1-1/8" 3137 29	137 A1 137 A2 137 A3 137 A3 A4 A5 337 A6 337 A6 337 A7 337 A1 337 B4 337 B4	o. Siz 1st Hex Choice 13 15/16" 2931 14 15/16" 2931 14-0 15/16" 2931 15(X) 15/16" 2931 24 15/16" 2931 34 15/16" 2931	Wrench No.	No. Size Hex. B10 1-1/8" B12 1-1/8" B14 1-1/8" B16 1-1/8" BC 1-1/8" V2 1-1/8" V4 1-1/8" V5 1-1/8" V9 1-1/8" V10 1-1/8" V10 1-1/8" V10 7/8"	Wrench No.  1st 2nd 3rd Choice Choice 3137 2937		
Hex Ch	Wrench No. Ist 2nd loice Choice 137 2937 JA	13 7/8" 2931 23 7/8" 2931 43 7/8" 2931 53 7/8" 2931	2937 2933 2937 2933 2937 2933 2937 2933 2937 2937 2937 2937 2937 3137 3137 3137	SF4 7/8" SF6 7/8" SF8 7/8" SF10 7/8" SF12 7/8" SF18 7/8"	2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937		
No. Size Hex Ct  A-J-M Auburn Mica 15/16" 2  A-I-M Auburn  Mica Tractor 1-1/8" 3  Blayer Large Hex 15/16" 3  Blayer Small Hex 15/16" 3	931 3137	Derf No. Size Hex All numbers 15/16"	Wrench No. 1st 2nd Choice Choice 2931 3137	No. Size Hex 1/2" Standard 7/8" 1/2" No. 2 7/8" 1/2" Long 7/8" 7/8-18 Standard 7/8" 7/8-18 No. 2 7/8" 7/8-18 Long 7/8" Rajah 1-1/8" Spec. Metric 1"	1st 2nd 3rd Choice Choice Choice 2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937		
No. Size Hex Cl Golden Giant 1-1/8" 3	137 2937 931 3137 G	No. Size Hex 1-1/8" unior 15/16"	Wrench No. 1st 2nd Choice Choice 3137 2937	No.	Sharp    Wrench No.   1st 2nd   2nd		
No. Size 1st 2 Her Choice Ci 07 7/8" 2931 2 08 7/8" 2931 2 019 7/8" 2931 2 027 1-1/8" 3137 2 029 1-1/8" 3137 2 27 1-1/8" 3137 2 29 1-1/8" 3137 2 61 15/16" 2931 3 62 7/8" 2931 2 63 15/16" 2931 3 101 7/8" 2931 3	933 2937 A 933 2937 A 933 2937 A 937 A 137 A 937 A 137 A 137 A 137 A 137 A 137 A 137 A	No. Size 1st Hex Choice A2 7/8" 2931 A4 7/8" 2931 A5 7/8" 2931 A10 7/8" 2931 A110 7/8" 2931 A12 7/8" 2931 A18 7/8" 2931 A18 7/8" 2931 A18 7/8" 2931 A19 7/8" 3137 A19 1-1/8" 3137 A19 1-1/8" 3137	Wrench No.  2nd 3rd Choice Choice 2933 2937 2933 2937 2933 2937 2933 2937 2933 2937 2933 2937 2937 2937 2937 2937 2937	No. Size Hex 141 7/8" P-144 7/8" P-157 7/8" P-165 7/8" P-174 7/8" P-174 7/8" P-1782 7/8" P-784 1-1/8" P-785 1-1/8"	2931 2933 2937 2931 2933 2937 2931 2933 2937 2931 2933 2937		

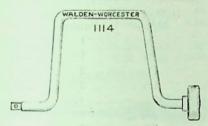
251 P. C.

### WALDEN---WORCESTER WRENCHES

INTERCHANGEABLE SOCKET WRENCH PARTS.

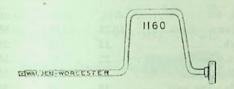
Heavy Duty Wrench Handles.

Used with Interchangeable Sockets. Four new tools are here shown for use with interchangeable sockets and other parts. These wrench handles are built for severe service and particularly recommended for use with 1/4", No. 228 and larger size



### BRACE SOCKET WRENCH.

Shank, 21/3" Length over all, 12". Wire, %". Sweep, 6". Throw, 12". 

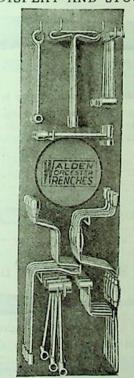


### BRACE SOCKET WRENCH.

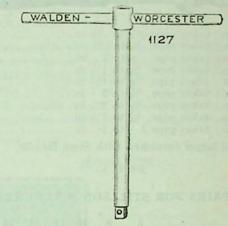
Long shank, 101/2' Length over all, 20". Wire, %". Sweep, 6". Throw, 12".

A considerably heavier speed wrench than our 6000 series. Extra sweep allows more leverage for use with large size sockets 1160. Wt. 2.75. Each.....\$1.50

NO. 40 DISPLAY AND STOCK SETS.

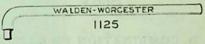


5-1420\$ 5-1620\$ 5-2418	1.10 \$5.5 .70 3.5 .80 4.0	1 ft.—40 wrenches. 0 5—5660\$1.20 0 5—5810\$5 0 5—701890	2.75
5-2718 5-3620	.60 3.0 .75 3.7		\$33.00



### TEE HANDLE WRENCH.

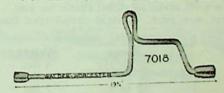
Shank, 10½"x½". Handle, 12"x½". Handle is adjustable to make L. type. 1127. Wt. 1.80. Each .....



### OFFSET HANDLE WRENCH.

Length over all, 12". 258 P. C

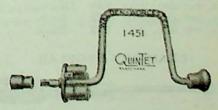
NEW DOUBLE POWER SPEED WRENCHES.



More power, more speed, less hand travel, more leverage; the loop on handle is the grip for extra leverage in releasing and final tightening.

Shank, 11". Length over all 1934". No. 7016. 1/2" socket. Each......\$0.90 No. 7018. " socket. No. 7020. "\s" socket. Each....

### QUINTET TIRE AND RIM WRENCHES.



Ample clearance for use on largest or smallest tires Brace 12", sheer %", wire holder for 5 sockets. Sizes %. 11, %, 18, %".

No. 1451. Price, each ..... 250 P. C.

### STILLSON PIPE WRENCHES.



Length, 6 in.; ta	akes pipe	1/s to	1/2	in			 \$	2.00
Length, 8 in.; to								
Length, 10 in.; ta	akes pipe 1	s to	1	in			 	2.50
Length, 12 in.; ta	akes pipe	1/4 to	11/4	in			 	3.00
Length, 14 in.; ta	akes pipe	1/4 to	11/2	in			 	3.50
Length, 18 in.; ta	akes pipe 1	4 to	2	in			 	5.00
Length, 24 in.; ta								7.25
Length, 36 in.; ta	akes pipe 1	4 to	31/2	in			 	13.50
Length, 48 in.; ta	akes pipe 1	to	5	in			 	20.00
18-inch and lar	ger furnishe	d wi	th S	teel .	Han	dle.		

506 P. C.

### REPAIRS FOR STILLSON WRENCHES.

Size, inches									
Jaws. Each	\$0.75	.80	.85	1.15	1.75	2.25	4.35	7.50	
Frames. Each									
Wood Handles. Each	.16	.16	.18	.25					
Steel Handles. Each	.95	.95	1.10	1.45	2.10	3.20	6.40	9.25	
Nuts. Each									
354 P. C.									

### G. T. D. COMBINATION PIPE CUTTERS.



The three wheels make a ratchet cutter for you. A quarter swing will cut any pipe. A rigid drop-forged frame, too.

Size	Range	Weight	Price Each	
1	1/8 to 11/4	4 lbs.	\$ 4.50	
2	1/s to 2	5 lbs.	6.00	
3	½ to 3	7 lbs.	10.00	
	or and 56 P.	C.		

### SCREW DRIVERS.



### No. 85.

3-inch.	Price, per	doz., 1703	\$2.15	Each 163	\$0.25
4-inch.	Price, per	doz., 1806	2.30	Each185	.30
5-inch.	Price, per	doz., 2000	2 50	Each 208	
6-inch.	Price, per	doz., 2257	2.85	Each 253	.40
7-inch.	Price, per	doz., 2907	3.25	Each 277	.45
8-inch.	Price, per	doz., 3253	3.70	Each 302	.50

### CHAMPION REGULAR.



Blade forged from toughest steel, tempered, and shrunk into a solid malleable bolster, which rests in heavy ferrule. Length of blade—

Per doz.....\$3.00 \$3.50 \$4.25 \$5.00 \$6.00 \$8.00 \$10.00 \$12.00

### TRIMO PIPE WRENCHES.



Length, Inches		Weight each, Pounds	Each
6	1/2	1	 .\$ 2.00
8	3/4	11/2	 . 2.25
10	1	2	 . 2.50
14	11/2	31/2	 . 3.50
18	2	41/2	 . 5.00
24	21/2	8	 . 7.25
36	31/2	17	 . 13.50
48	5	26	 . 20.00
	556	P.C.	

### REPAIRS FOR TRIMO PIPE WRENCHES.

Price, each, for	6-in.	8-in.	10-in.	14-in				
Movable Jaws. Each	\$0.75	\$0.80	\$0.85	\$1.15				
Nuts. Each	.12	.15	.20	.30				
Insert Jaws. Each	.35	.40	.50	.60				
Frames. Each	.38	.42	.50	.60				
Nut Guards. Per pair	.15	.15	.20	.30				
Price, each, for	18-in.	24-in.	36-in.	48-in.				
Movable Jaws. Each	\$1.75	\$2.25	\$4.35	\$7.50				
Nuts. Each	.35	.55	1.10	1.50				
Inserted Jaws. Each	.70	.80	1.10	2.00				
Frames. Each	.75	.95	1.70	2.20				
Nut Guards. Per pair	.35	.45	.55	.65				
Repairs, 506 P. C.								

### "PERFECT HANDLE" WRENCHES.



No. 615.

 8 inches
 18.00

 10 inches
 22.00

 12 inches
 28.00

 15 inches
 38.00

 18 inches
 48.00

 21 inches
 58.00

501 P. C.

### PERFECT HANDLE SCREW DRIVERS.



"All its value in plain sight."

From Hammer Head to Driver Tip a Solid, One-Piece Drop-Forging. Blade Length Diam. Per Doz. Each 2 inches..... \$0.40 1/4-inch \$ 4.25 4 inches..... .40 1/4-inch 4.25 6 inches..... .55 is-inch 6.00 .70 8 inches..... 3/s-inch 8.00

> %-inch 206 P. C.

.90

10.00

10 inches.....

### SCREW DRIVERS.

### "PEERLESS."



No. 510. Forged from spring steel, blade passes entirely through the handle, which is of ebony finsh hardwood. Each .....\$0.40 40 40 4.54 5.08 5.90 Per dozen ..... 4.24 4.44 12 10 Blade, inches ..... 8 85 60 80 .....\$0.55 9.75 11.36 Per dozen ..... 6.06 7.00 9.08 "MACHINISTS."



 Blade, inches
 3
 4
 5
 6
 8

 Each
 \$0.55
 .55
 .65
 .70
 .75

 Per dozen
 6.04
 6.56
 7.28
 8.04
 8.60

 333
 P. C.

### MAYHEW STRAIGHT TAPER.



### PERFECT HANDLE



Handles are riveted in, locked in under tons of pressure, and water proofed, has added wings. Recommended for greater leverage drawing old rusty screws, etc.

No. 660. Sizes ...... 6" 8" 10"

Price, per dozen ..... 5401 \$8.00 7003 \$10.00 8906 \$12.50



Blade of spring steel 18" rod extends through the handle and inseparably attached to steel cap. Maple handle, chony finish, steel ferrule, nickeled ball shaped handle gives 1 powerful grip.

### MIDGET TWIN.



### HAN-D HAMMERS.



### YANKEE RATCHET.



The Standard Spiral-Ratchet Screw Driver, right and lefthand or rigid, 13½ inches long, including bit, when closed, has 5½-inch stroke.

No. 31. This tool is of same design as No. 30, but is made considerably heavier and stronger throughout, for use where heavy screws are required to be driven or drawn. Three bits of different widths are included with each tool. The extreme length of tool with bit in chuck is 17½ inches when closed, and 26¼ inches when extended.

### MONARCH.



Blades hammer forged from tool steel; ferrule nickel-plated; handle hardwood, mahogany finish.

per Card of 12.... 90; \$1.50

### FOUR IN ONE.



Consists of four small Screw Drivers, all practical and useful sizes, in one compact tool.

Is 6 inches long, less than 34-inch thick, and weighs about 3 ounces complete. All parts are polished and nickel-plated. Blades made of the best quality steel.

### THREE IN ONE.

Nickel-plated and polished all over, blades made of high grade screw driver steel.

Three distinct screw drivers in one, on display eard, 12 to a card.

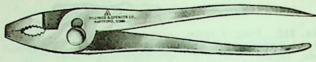
### DUPLEX.

The large blade is protected by a metal cap, the small blade is part of the handle and screws into the handle of large blade. Length of Duplex 3%" over all.

12 mounted on a card for display.

# B. & S. COMBINATION PLIERS.

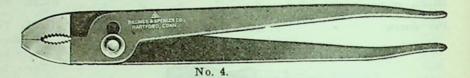




No. 3.







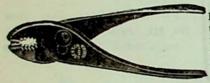
### MODEL M.

### Drop forged from the best tool steel.

No. 1. 6-inch. Wt. 7 oz. each. 1  Each Plier Bolts, each Plier Nuts, each	\$1.15 .08 .05	Nickel Plated. \$1.25	No. 3. 10-inch. Wt. 14 oz. each.  Each Plier Bolts, each Plier Nuts, each No. 4. 14-inch. Wt. 2 lbs. 1 oz.	\$1.50	Nickel Plated. \$1.75
No. 2. 8-inch. Wt. 9 oz. each.  Each Plier Bolts, each Plier Nuts, each	1.35 .08 .05	1.50	each. Each Plier Bolts, each. Plier Studs, each.	\$2.00 .10 .06	\$2.50

### 256 P. C. In lots of 6 or more, 331 P. C.

### COMBINATION SLIP-JOINT PLIERS.



Drop forged from a high grade tool steel, oil tempered, finished in a first-class manner, and warranted free from defects. Packed one in a box. Wt., 8 oz. each.

				Each.	Per doz.
No.	2377.	6-inch,	Black	.509 \$0.60	5409 \$8.00
No.	2378.	6-inch,	Nickel	553 .85	6006 9.00

### CRONK COMBINATION PLIERS.

About same style as the Combination Slip-Joint Pliers

Drop forged from 60 carbon crucible analysis O. T. steel, hardened and oil tempered. Weight, 8 ounces. 

### CAST STEEL PLIERS.

No. 1023. 61/2-in.; wt., 8 oz. Per dozen......2206 \$3.00

### G-S COMBINATION SLIP-JOINT PLIERS.



Made of best drop forged tool steel. Hardened and tempered, finished and machined accurately. .....55/ \$1.00

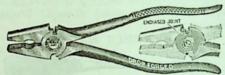
### WILDE AUTO PLIERS.



With wire cutter, drop forged from special high carbon plier steel, accurately machined, tempered and hardened. fully nickeled over a heavy copper plate. The long slim nose measures 1%

heavy copper plate. The long slim nose measures 11/4". 

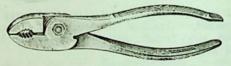
### SLOT CUTTING PLIERS.



The joint is enclosed, having a bearing around its entire circumference.

Weight Price, ea	, 13 oun ch	ces.		 	 	 1103	\$1.50
No. 648.							
No. 648.	S-inch.	Per	dozen	 	 	 7806	12.00

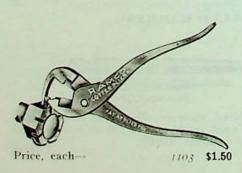
### COMBINATION SIDE CUTTING PLIERS.



No. 1873.

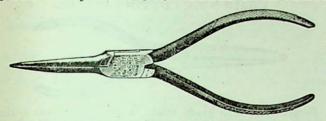
Made of special steel with sharp side cutter. Possesses great leverage. Knurled handles. Nickel. Size, 7 inches. Weight, 61/2 pounds per dozen.

### RAMCO COTTER PLIERS.



Will pull cotter without pins straightening and from any angle. Also holds pin after withdrawing from bolt.

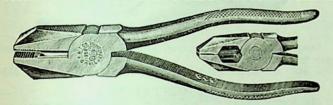
Made from drop forged steel, tempered and rustproof.



This plier has a long, half-round, spring-tempered nose and is especially adapted to fine work, and in assembling small electrical apparatus it is indispensable. Automobilists will find this an ideal tool to carry in the kit for repairing inner tubes, inserting plugs, drawing cotter pins, etc.

No. 777.	Utica finish, size	6"
	Weight, per dozen31/2 lb	S.
	Price, per dozen 15003 \$18.	95

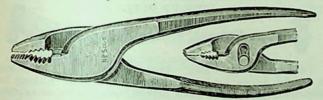
### UTICA LINEMAN'S HEAVY SIDE CUTTING PLIERS.



One of the best side cutting pliers made. It is a general favorite with linemen, owing to the shape of the handles and the keen, strong cutting edges, and its adaptability to all kinds of work where a heavy side cutting plier is used. The handles are checkered, not knurled, which gives an ideal gripping surface when the hand is wet, oily or gloved.

No. 1950.	Utica finish, size	6"	7"
	Weight, per dozen	5¾ lbs.	91/4 lbs.
	Price, per dozen	9203 \$20.42	21006 \$24.94

### UTICA SLIP JOINT COMBINATION PLIERS.



This plier differs from the ordinary combination plier in that it is designed for the automobile mechanic. The nose is long and narrow, the rivet is flush on both sides, doing away with the old trouble of tightening the bolt every time the plier is used.

No. 5000.	Utica finish, size	.5"
	Weight, per dozen3¼ 1	bs.
	Price, per dozen	.60

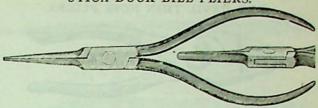
# UTICA BOX JOINT SLIP JOINT PLIERS.



This tool has many advantages over the ordinary slip joint plier. The jaws where all the work is done are supported equally on both sides of the plier, there being no one-sided twist or strain on the rivet or bolt when gripping or cutting. It also does away with the large-headed bolt and nut which is always in the way and a continual source of annoyance to the user.

No.	Utica finish, size	
	Price, per dozen	

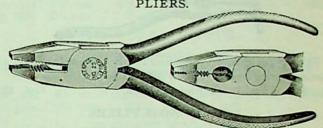
### UTICA DUCK BILL PLIERS.



A long, slender, spring-tempered box joint duck bill plier. For use by jewelers, opticians, loomfixers, weavers, knitters, radiator repairmen, and on various other kinds of mill work where a high quality, spring-tempered duck bill plier is used.

No. 11. Utica finish, size...... 6" 7"
Weight, per dozen..... 5½ lbs. 7 lbs.
Price, per dozen...... 13803 \$18.67 15607 \$21.31

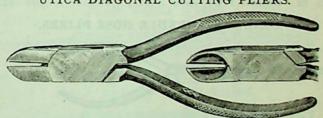
# UTICA COMBINATION FLAT NOSE BURNER PLIERS.



This plier is used by electricians, machinists and general repairmen, owing to its adaptability to so many kinds of work. The teeth in the burner grip are designed so they will grip and hold firmly with very little pressure on the handles. The cutting edges are the Utica standard cutting edges.

No. 25.	Utica finish, size5½"
	Weight, per dozen3% lbs.
	Price, per dozen

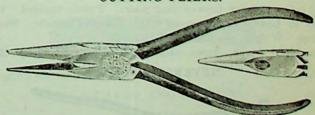
### UTICA DIAGONAL CUTTING PLIERS.



Is used by automobile mechanics and electricians in assembling all kinds of electrical apparatus. The cutting edges are designed so they will cut silk-covered wire without injuring the covering or bruising the wire. The handles are checkered.

No. 42.	Utica finish, size51/2"
	Weight, per dozen31/4 lbs.
	Price, per dozen

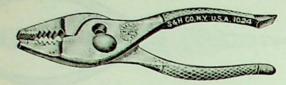
# UTICA LAP JOINT LONG NEEDLE NOSE SIDE CUTTING PLIERS.



This plier is specially adapted for extra fine work. It is forged from an extra quality of steel, and its carefully spring-tempered nose and keen, strong cutting edges make it a most desirable tool for fine work. The handles are checkered.

No. 655.	Utica finish, size6"
	Weight, per dozen
	Price, per dozen

### RED DEVIL THIN NOSE PLIERS.



Forged from highest grade tool steel. Has screw driver end and will cut wire.

### COTTER PIN PLIERS.



The special purpose of this Plier is to insert, spread and remove spring cotter pins in difficult places.

### CHAIN NOSE PLIERS.



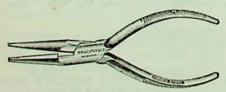
Forged from tool steel, spring tempered nose and handles, cross checked jaws. Weight, per dozen, 3½ pounds. Gun Metal finish.

No. 22. 6-inch. Price, each......801 \$1.15

### LONG FINE NEEDLE NOSE PLIERS.

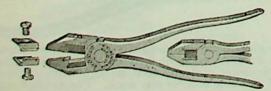


### NEEDLE NOSE SIDECUTTING PLIERS.

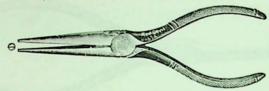


A very slender nose-cutting pliers. Points tapered. Has hole in handle to fasten to belt. Knurled handle. Nickel finish. Weight, per dozen, 2% pounds.

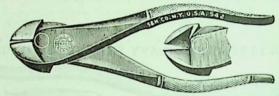
### NEVERSLIP PLIERS.



### CHAIN NOSE CUTTING PLIERS.

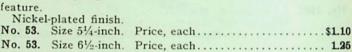


### DIAGONAL SIDE CUTTING PLIERS.

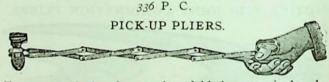


### SOLID JOINT PLIERS.

Having a wider opening than Slip Joint, gives greater leverage. Furnished with knurled handles and screw-driver feature



MAYHEW SOLID-JOINT PATENTED



### V-B NUT LOCK PLIERS.



Best designed pliers for use on bolts and nuts. A solid grip is always secured on the nut. Wire cutter between jaws.

Assortment No. 200. Contains six pliers—four No. 5 and two No. 3. Price, per assortment......3506 4.00

### UTICA SIDE CUTTING PLIERS.



Light in weight, but tempered that the handles will not bend or set when great pressure is exerted on them.

# FILES

# MILL BASTARD. Size 12-in. Per doz....\$ 7.50 Size 14-in. Per doz.... 10.70 Size 6-in. Per doz .... \$ 3.50 Size 16-in. Per doz.... 14.70 FLAT BASTARD.

Size 12-in. Per doz 9.70 Size 16-in. Per doz.	Size 10-in. Per doz Size 12-in. Per doz			
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### FLAT SECOND CUT.

STATE OF THE PARTY OF THE PARTY

A STATE OF THE PARTY OF THE PAR

50	T. Change Land		MINISTERNATION OF THE PARTY OF
Used for	fine grade wo	ork and finishing.	
Size 6-in.	Per doz\$	4.80 Size 12-in.	Per doz\$11.00
Size 8-in.	Per doz	6.10 Size 14-in.	Per doz 15.30
Size 10-in.	Per doz	8.10	

### TAPER SAW.

	Charles of the Control of the Contro	ne annual park	almost and a local party		
Size 41/2-in.	Per doz\$ Per doz	2.40		Per doz\$ 3.00 Per doz 3.40	

### SLIM TAPER.

	WARRING CO.	AND THE SECOND	- Comment
Size 4 -in.	Per doz\$ 2.10 Per doz 2.20 Per doz 2.30	Size 5½-in.	Per doz\$ 2.50 Per doz 2.90 Per doz 3.10

### EXTRA SLIM TAPER.

234120		No. of the last of	ON THE PROPERTY OF
Size 4½-in.	Per doz\$ 2.30	Size 5½-in.	Per doz\$ 2.90
Size 5 -in.	Per doz 2.50	Size 6 -in.	Per doz 3.10

### ROUND BASTARD.

-	1	ALL THE STATE OF T	1500	1460011	Eller Same
Size	8-in.	Per doz\$ Per doz	4.30		Per doz\$ 7.50 Per doz 10.70

### SQUARE BASTARD.

Water State Company

Size 8-in.	Per doz\$ Per doz	5.50	Per doz\$10.20 Per doz 13.90

### CANT SAW.

	THE PERSON NAMED IN COLUMN TWO	1	

			doz																
ize	8-in.	Per	doz			٠.	 				٠.				 			6.4	10

### FILES BLUNT BAND SAW.

Size 6-in. Per doz ..... \$ 4.70 Size 8-in. Per doz .... \$ 6.70 HALF ROUND BASTARD.

THE RESERVE TO SERVE THE PARTY OF THE PARTY

Size 12-in. Per doz.....\$11.80 Size 16-in. Per doz....\$20.60 Size 14-in. Per doz..... 15.50

### HALF ROUND SECOND CUT.



Size 12-in. Per doz .... \$13.00 Size 16-in. Per doz .... \$22.50 Size 14-in. Per doz .... 17.00

### HALF ROUND SMOOTH.



Size 16-in. Per doz ... \$24.20 Size 12-in. Per doz ... \$13.90 Size 14-in. Per doz ... 18.30

### CABINET WOOD.



Size 12-in. Per doz...\$18.70 Size 14-in. Per doz... 24.80 Size 16-in. Per doz ... \$32.90

### FLOAT CUT FILES.

Size 14-in. Price each. \$1.10 Size 16-in. Price each. \$1.50 Size 15-in. Price each. . 1.35

### FLAT WOOD RASPS.

Size 14-in. Per doz...\$23.20 Size 16-in. Per doz...\$30.80 HALF ROUND WOOD RASPS.

Size 14-in. Per doz...\$24.80 Size 16-in. Per doz...\$32.90 CABINET WOOD RASPS.

Size 14-in. Per doz.....\$29.60

### FILE BRUSHES.



### FILE CARDS AND SCORERS.



\$ 5.40	Weight each 5 ozs.	Price each601	\$1.00
Nicholson Files and Rasps		501 P. C.	
Great Western Files and Rasps		653 P. C.	

(F)STARRETT TOOLS.

### SPRING TEMPERED RULES.



### No. 300.

No. 4 Graduation, 8, 16, 32, 64. Thickness, 4-inch or 18 gauge.

Approx.	Length,	Price,	Approx.	Length,	Price.
Width.	Inches.	Each.	Width,	Inches.	Each.
1/2	1	\$0.30	3/4	6	\$0.90
1/2	2	.45	7/8	9	1.35
16	- 3	.60	1	12	1.65
5/8	4	.75	11/4	24	3.25



### No. 303.

No. 4 Graduation, 8, 16, 32, 64.

Is also graduated in 32nds of an inch on opposite sides of one end.

Approx. Width.	Length, Inches.	Price, Each.	Approx. Width.	Length, Inches.	Price, Each.
1/2	2	\$0.45	3/4	6	\$0.90
1s	3	.60	_ 7/8	9	1.35
5/8	4	.75	1	12	1.65



### Nos. 600 and 603.

These rules are made the same width and thickness as No. 300. Special attention is called to the fact that these rules are figured so as to assist the user to quickly read the 64ths,

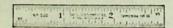
as shown by the cut.
No. 600 has No. 4 Graduation, which consists of 8ths and

16ths on one side, and 32ds and 64ths on the other. No. 603 has No. 4 Graduation, and is graduated in 32nds of an inch on both ends of one side.

Approximate—inches:

Prices ......\$0.45 \$0.60 \$0.75 \$0.90 \$1.35 \$1.65

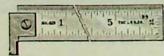
### FLEXIBLE RULES.



### No. 320.

These are very thin spring-tempered rules, nicely graduated on one side only. Those from 1-inch to 12-inches are 1/2-inch wide, and will easily conform to a 2-inch circle. 

### IMPROVED HOOK RULES.



### No. 419.

Very convenient in taking measurements from round corners, through hubs of pulleys, setting inside calipers, etc. The 6-inch may be carried in the pocket. The hook can be quickly removed by turning eccentric stud one-half round. Lengths 6 in. 9 in. 12 in. Prices \$1.25 \$1.75 \$2.15

### NARROW HOOK RULES.



No. 422.

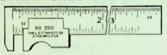
These rules are designed for use in taking measurements through small holes, where our regular hook rules cannot be used. They can also be used for setting inside calipers, etc. Measurements through holes as small as %-inch can be ob-

The rules are graduated one side in 32ds and the other in 64ths of an inch. Lengths 4 in. 6 in. 9 in. 12 in Prices \$1.00 \$1.20 1.65 \$2.00



For use in grinding and setting screw-cutting tools. No. 390. Not tempered; graduated one corner each in 32nds, 24ths, 20ths and 14ths.....\$0.40 

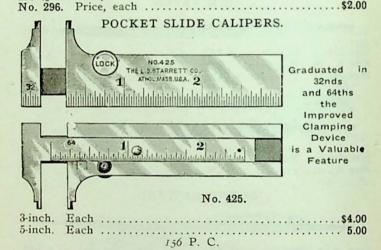
### SLIDE CALIPER RULES.



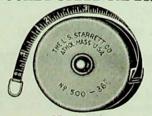
No. 296.

Where many measurements are to be taken on small rods, tubing, etc., it is convenient to have an instrument which measures the object between two contacts. As the calipersquare may be too expensive, this slide caliper rule is very satisfactory on this class of work.

The rules are 4 inches long, about ½-inch wide, and ½-inch thick. The graduations are No. 4, with 32ds and 64ths on the front as shown, and the 8ths and 16ths on the back. The thumb piece slides in a groove on the reverse side. The jaws are ½-inch deep.



### POCKET STEEL TAPES.



No. 500.

These tapes are 1/4-inch wide, in well finished nickel-plated cases, with rounded edges. Spring wind with center stop.

Graduated II			
36-inch, in o	case 1%-inch	diameter.	Each\$0.75
60-inch, in o	case 1½-inch	diameter.	Each
72-inch, in o	case 111-inch	diameter.	Each 1.00
96-inch, in o	case 11%-inch	diameter.	Each
120-inch, in o	case 112-inch	diameter.	Each 1.90
		151 P. C.	

(F) Goods marked (F) not carried in stock; can be furnished from factory.

### (F)STARRETT TOOLS.

### STEEL MEASURING TAPES.



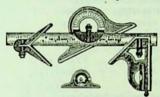
These tapes are 3/8-inch wide, in hard leather cases, flush handle, trimmings nickel-plated.

Graduated in feet, inches and eighths of an inch.

						Each
25	ft.,	in	case	27/s-in.	diam.	.\$4.90
33	ft.,	in	case	27/s-in.	diam.	. 5.30
50	ft.,	in	case	33/s-in.	diam.	. 6.00
66	ft.,	in	case	31/2-in.	diam.	. 7.50
75	ft.,	in	case	37/s-in.	diam.	. 7.80
100	ft.,	in	case	41/2-in.	diam.	.10.00

No. 510. In Leather Cases.

### COMBINATION SOUARES.



No. 9. With Hardened Blade.

The Combination Square met with such universal approval The Combination Square met with such universal approval from machinists that it was but a step to add to it the protractor head, and have a combination set, made up of the Rule on which slide the square-head, center-head and protractor-head. This makes possible more varieties of uses in laying out and testing work than are possible with any other instrument used by mechanics.

There are a number of different combinations of the heads with different lengths and styles of rules. This cut shows combination square (No. 11, with center head and 7-inch bevel protractor).

9-inch.	Set	complete	 	 	 	 	 					\$6.00
12-inch.												
18-inch.												

### PATENT COMBINATION SOUARES.



No. 11. With Hardened Blade.

Every tool warranted accurate. With the adjustable scale, this forms one of the most convenient and useful tools ever devised for mechanics' use. It is a complete substitute for a whole set of common try squares, and is one of the best gauges made for transferring exact measurements or laying out work. It is also convenient for a depth gauge, or to square in a mortise. For a miter, it is perfect, while, with the auxiliary center head, it forms a centering square, both inside and outside, which for convenience and accuracy has no equal. The blades are hardened and graduated with heavy figures, reading both ways.

Gradu	ations:	8ths,	16ths,	32nds, 64ths.
6-inch.	With	center	head.	Each\$2.40
				Each 3.00
				Each 3.60
				Each 4.50
24-inch.	With	center	head.	Each,5.40

### PIN VISES.



N	0	1	ß	9
	U.	-	u	~

No. 162A.	Capacity	.0	inch	to	.040	inch.	 	 \$	0.70
	Capacity								
No. 162C.	Capacity	.050	inch	to	.125	inch.	 	 	.70
No. 162D	. Capacity	.115	inch	to	.187	inch	 	 	.90
Set comp	lete (one of	each	size)				 	 	3.00

158 P. C.

IMPROVED SCRIBERS.

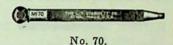


This scriber is made for mechanics who want a good tool. These points are made of a fine grade of steel, nicely tem-The knurled stock is of sufficient size to be easily held without cramping or turning in the fingers. bent point will be found a valuable auxiliary for reaching through holes, etc. Length, with short, bent point, 9 inches; with long point, 12 inches. All parts are interchangeable. The knurled sleeve is nickeled.

Straight point, long or short bent point. Price, each... .15 Long bent point. Each.....

The tool will be sent complete, unless otherwise ordered.

### POCKET SCRIBERS.





This tool is made from steel tubing, knurled and nickelplated. The scriber is made from the best quality of steel, nicely tempered, and is held by a knurled chuck. scriber is reversible, telescoping into the stock, and is held by a slight turn of the chuck, so that it is always as safe to carry in the pocket as a penknife.

Mechanics find this a convenient tool to have always with

No. 70A. Handle 1/4-inch diameter; blade 23/8 inches 

### JOBBERS' DRILL GAUGES.



### No. 187.

### For Gauging Twist Drills.

This gauge shows sizes from 16-inch to 16-inch, varying by 64ths. Each size is designated by both common and decimal fractions. The gauge is hardened and tempered, and the holes standard.

153 P. C. \$2.75 No. 187. Price .....

### DRILL TAPS AND STEEL WIRE GAUGES.



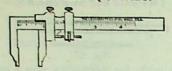
By the use of this gauge, one is enabled to select at once the right sized drill to suit machine screw tap most commonly used, leaving just stock enough for the top to cut as near a full thread as is practicable for one tap without breaking it, thus saving much time and uncertainty of result attending the former crude ways of making a selection.

Explaining the chart, the first row of figures, for an example, read this, 14x20 101/4. The number 14 (in the first row of figures) means the number or size of tap; 20 the pitch or size of thread; 10 the size of drill to use, which will leave the right stock for proper

No. 185. thread; and 14, size of drill to use to let this tap or screw through outside of the thread.

The figures-1, etc. up to 60-designate the number of drill (size agreeing with the holes). Other figures, 228, 221, etc., designate the size of hole in thousandths of an inch. 151 P. C.

### CALIPER SQUARES.

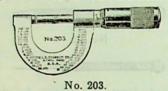


No. 426.

This Caliper Square is designed both for inside and outside measurements. It is made with firm and adjustable jaw. The beam is graduated on one side in 4ths, and on the other in 100ths of an inch. With the adjusting screw the sliding head can be more accurately set to the graduation.

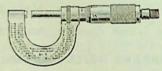
nea	d can be more accurately set to the graduation.	
A.	3-inch, with adjusting screw\$	8.00
B.	4-inch, with adjusting screw	10.20
C.	6-inch, with adjusting screw	12.00
	ather case, extra	
	ent without case unless otherwise ordered	

### ONE-INCH MICROMETERS.



				sandths	up to or	ie inch.	
							\$8.50
In lea	ther cas	se	 				9.50

### MICROMETERS.



No. 3.

For measurements by thousandths, up to one inch.	Has
lock nut and ratchet stop.  No. 3. One-inch	0.00
In leather case	1.00

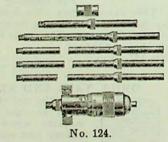
### INSIDE MICROMETERS.

Set A has 6 rods and one ½-inch gauge, and measures from 2 inches to 8 inches.

Set B has 10 rods and one 'g-inch gauge, and measures from 2 to 12 inches.

Set C has 4 rods and one 1-inch and two 2-inch gauges, and measures from 8 inches to 32 inches.

Set D comprises sets A and C, and measures from 2 inches to 32 inches.



	.c				
Set A.	With case	\$ 8.50	Without	case \$	7.25
Set B.	With case	 10.00	Without	case	8.50
Set C.	With case	 12.75	Without	case	10.25
Set D.	With case	 20.50	Without	case	17.50
	extra				
	with case, u				

### MICROMETER HEADS.



No. 263. English, One-Inch.

### MICROMETER SETS.



Each micrometer is graduated to read by thousandths of an inch, is furnished with our patent lock nut, and is sent with or without ratchet stop, as desired.

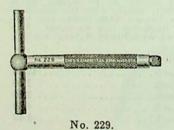
The frames are drop forged from bar steel, and are nicely finished.

The 1-inch has the decimal equivalents stamped on the frame. The other sizes are marked to show their capacity.

Standards for use in adjusting these micrometers will be furnished, when desired, at prices given below.

Ato. and. bired, at pr	ices green below.	
1-inch. With decimal equival	lents stamped on frame:	
	Price\$	9.50
With ratchet stop.	Price 1	0.00
Case only	Price 1	1.00
2-inch. From 1 inch to 2 inc	ches:	
Without ratchet stop.	Price	8.50
With ratchet stop.	Price	9.00
1-inch Standard.	Price	1.50
3-inch. From 2 inches to 3 in	nches:	
Without ratchet stop.	Price 1	0.00
With ratchet stop.	Price 1	10.50
2-inch Standard.	Price 1 Price 1 Price 1	1.50
4-inch. From 3 inches to 4 in	nches:	
Without ratchet stop.	Price 1 Price 1 Price 1	10.75
With ratchet stop.	Price 1	1.25
3-inch Standard.	Price	1.75
5-inch. From 4 inches to 5 i	inches:	
Without ratchet stop.	Price 1	12.00
With ratchet stop.	Price 1	12.50
4-inch Standard.	Price 1 Price 1 Price 1	2.00
6-inch. From 5 inches to 6 i	nches:	
Without ratchet stop.	Price 1	13.00
With ratchet stop.	Price 1	13.50
5-inch Standard.	Price 1 Price 1 Price 1	2.40
226C. Set of three Microme	ters, 1, 2 and 3-inch:	
Without ratchet stop.	Price 2	28.00
In case.	Price 3	32.00
226D. Set.		
With ratchet stop.	Price 2	29.50
In case.	Price 3	
226E. Set of six Micrometers	s, all sizes from 1-inch to 6-in	nch:
Without ratchet stop.	Price	
In case.	Price	
226F. Set.		
With ratchet stop.	Price 6	34.75
In case.	Price	
		447

### TELESCOPING INSIDE GAUGES.



These are instruments from which the exact size of holes or slots can be taken by an outside caliper or micrometer, so that shrink, close or loose fits, varying in thousandths, or less, can be made and measured.

To use the instrument to measure a hole: Compress the telescoping head and lock the plunger by a slight turn of

plunger by a slight turn of the knurled screw in the end of the handle, insert the head inside the hole, release the lock, and the plunger will expand across the hole to a fit. Now lock the plunger by a slight turn of the screw, withdraw and caliper over the ends of the head with a micrometer which will give the exact size of the hole.

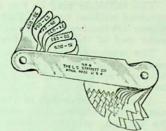
No. 229A.	Range	1/2-inch	to	3/4-inch.	Price.	each\$	1.80
No. 229B.	Range	3/4-inch	to	11/4-inch.	Price.	each	2.10
No. 229C.	Range	11/4-inch	to	21/s-inch.	Price.	each	2.40
No. 229D.	Range	21/s-inch	to	3½-inch.	Price,	each	3.00
No. 229E.	Range	31/2-inch	to	6 -inch.	Price.	each	3.60

51 P. C.

(F) Goods marked (F) not carried in stock; can be furnished from factory.

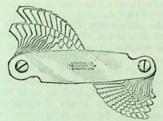
(F)STARRETT TOOLS.

### SCREW PITCH GAUGES.



No. 4. 24 Pitches, 4 to 30.

Has the following pitches:  $4, 4\frac{1}{2}, 5, 5\frac{1}{2}, 6, 7, 8, 9, 10, 11, 11\frac{1}{2}, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30. The teeth are sharp and clean cut. It can be used inside of a nut$ as well as on outside of a screw or bolt. It is also a convenient and reliable tool to use as a 60-degree center gauge and gauge to test the grinding of either an inside or outside threading tool. Price ....

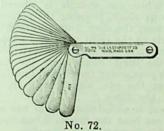


No. 155. U. S. Standard.

This gauge has 25 pitches, viz: 2½, 2¾, 2¾, 2½, 2⅓, 2¼, 2⅓, 3, 3¼, 3½, 4, 4½, 5, 5½, 6, 7, 8, 9, 10, 11, 12, 13, 14. 16, 18, 20,

Also a center gauge, with coarse and fine notch. . . . . \$2.00

### THICKNESS GAUGES OR FEELERS.



This gauge has 22 leaves, varying in thickness by thousandths, running from .004 to .025. The thickness of each leaf is designated by the number upon it. Each leaf may be used singly or in combination with others, and any thickness in thousandths, within their limits, may be quickly obtained. The leaves fold within the case, which is 23/4 inches long, a convenient size to carry in the pocket.

THICKNESS GAUGES.

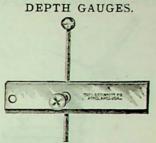






No. 172A. Case 3% inches long by 1/2-inch wide; leaves 3 to inches long by ½-inch wide. Price......\$1.50

No. 172B. Case 4¾ inches long by ½-inch wide; leaves
4½ inches long by ½-inch wide. Price............2.50 151 P. C



The wire in this gauge is held to a groove by a friction spring inside the nut while adjusting, and may be used close to the end, as well as in the middle of the straight edge.

	ening the nut,			
No. 45A.	With 31/2-inch	stock. P	rice	 \$0.90
No. 45B.	With 6 -inch	stock. P	rice	 1.40
No. 45C.	With 10 -inch	stock. P	rice	 1.65

### PATENT MICROMETER DEPTH GAUGES.

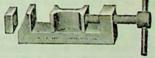


This gauge is designed for measuring the depth of grooves, holes or irregular parts It has ½-inch movement of the screw, reading in thousandths; and with two ½-inch and one 1-inch standard collars to slip off or on the spindle, 21/2 inches, reading in thousandths, can be obtained. The split nut is covered and protected by our patent graduated sleeve, which not only protects the nut from dirt, but provides a quick and accurate way of taking up wear and adjusting the micrometer to insure correct reading. The sleeve, being held by a stiff friction, may be rotated by a

spanner wrench, accompanying each gauge, so that the zero lines will coincide for correct reading. The head is about 3/10 inch thick; this and the point of measuring rod are hardened

No. 446A. With 21/4-inch base, with case.	Price\$8.75
Without case.	Price 7.75
No. 446B. With 4-inch base, with case.	Price 9.75
Without case.	Price 8.50
Sent with case, unless otherwise ordered.	

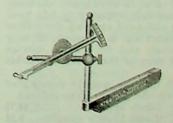
### TOOL MAKERS' STEEL CLAMPS.



No. 160.

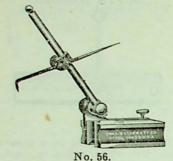
These clamps are made from drop forgings, nicely finished. case-hardened, and have take-up blocks to slip on and off end of screw, and are held to same in a novel manner. They will hold work square and parallel for laying out on surface plates, fitting or drilling. A round piece may be rigidly held in two of the clamps and drilled on an upright, central and parrallel. Put up and sold in pairs. With the small block in use, the capacity of the smaller clamp is a little over one inch, and that of the large clamp two inches. 1-inch. Per pair ......\$2.50 

### UNIVERSAL TEST INDICATORS



Price, Indicator only . \$3.00 Tool-Post Holder, without Tool-Post Holder, with Holder and Arm, complete ..... 4.25 Sent complete unless otherwise ordered. 152 P. C.

TOOL MAKERS' UNIVERSAL SURFACE GAUGES.



This gauge is admirably adapted for light work. The base is steel, nicely finished and case-hardened, with depressions milled in the sides for the thumb and finger to grasp. The top side of it is slotted, and the rocking bracket is pivoted in the same.

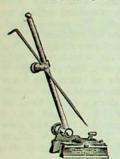
No. 56A. With 4-inch spindle and auxiliary guide. \$4.10

No. 56B. Without auxiliary guide. 3.50

Sent with guide, unless otherwise ordered.

A 7-inch spindle is furnished, when ordered, at an extra cost of 30 cents.

### NEW UNIVERSAL SURFACE GAUGES.



This gauge has our latest improvements, which make it all that can be desired, possessing the following points of merit:

Heavy base, grooved through the bottom and end, adapting it for use on or against circular work, as well as flat surfaces.

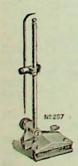
The spindle passes through a rotating head, jointed to a rocking bracket, pivoted in base. The bracket being adjusted by a knurled screw in one end against a stiff spring in the other, the spindle may be set upright or at any

angle, or turned so as to work under the base, and be sensitively adjusted to any position. The snug and head carrying the scriber are so made, that, when the clamp nut is loosened, all may be freely moved to any position, and by friction springs retained in place until a slight turn of the clamp nut holds them firm.

In the rear end of the base, are two gauge pins, frictionally held, which may be pushed down to bear against the edge of a surface plate or in the slot of a planer bed for linear work

An extra long sipndle, which may be quickly substituted for the regular, will be sent with the gauge, when ordered 

### With Case-Hardened Steel Base.



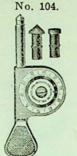
This gauge has our latest improvements, which make it all that can be desired, the following being points of special merit:

It has a heavy base, grooved through the bottom and end, adapting it for use on or against circular work as well as flat surfaces. The spindle passes through a rotating head, jointed to a rocking bracket, pivoted in base, the bracket being adjusted by a knurled screw in one end against a stiff spring in the other. The spindle may be set upright or at any angle, or turned so as to work under the base, and can be sensitively adjusted to any position. The snug and head carrying the scriber

are so made, that when the clamp nut is loosened, all may be freely moved to any position, and by friction springs retained in place until a slight turn of the clamp nut holds

An extra long spindle, which may be quickly substituted for the regular, will be sent with the gauge, when ordered. No. 257A. 3 -inch base with 9-inch spindle ......\$4.75
No. 257B. 3 -inch base with 9-inch spindle ......\$5.30
No. 257C. 3½-inch base with 12-inch spindle ......\$5.30 No. 257D. 31/2-inch base with 12 and 18-inch spindles.. 6.00

### SPEED INDICATORS.



This indicator may be run at highest speed required without heating, and this on account of our frictionless bearing against which the inner end of the spindle revolves.

The working parts of this instrument are encased, and the dial plate has two rows of figures, reading right or left, as the shaft may run.

A late improvement in this indicator consists in the rotating disc, which, being carried by friction, may be moved to the starting point, where the raised knobs coincide.

When the spindle is placed in connection with the revolving shaft, pressing the raised knob with the thumb will prevent the disc from rotating, while the hand of the watch gets to the right position to take the time. By releasing the pressure, the disc is liberated for counting the revolutions of the shaft, when every 100 may be noted by feeling the knob pass under the thumb lightly pressed against it, thus relieving the eye, which has only to look on the watch to note the time. Nickel-plated.

.....\$1.25 Price ..... 2.00 In leather case. Price..... We supply the indicators with a spindle 71/2 inches long

for use on dairy machines, etc., for 60 cents extra. The indicator without case will be sent unless otherwise

ordered.

No. 106.



This is a nicely made and finely working indicator. The working parts are inclosed like a watch, and as well made. The graduations show every revolution, and with two rows of figures read both right and left, as the shaft may run. While looking at the watch, each hundred revolutions may be counted by allowing the oval headed pin on the revolving disc to pass under the thumb as the instrument is pressed to its work.

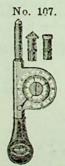
A late improvement in this indicator consists in the rotating disc, which, being carried by friction, may be moved to the starting point where the raised knobs coincide. When the spindle is placed in connection

with the revolving shaft, pressing the raised knob with the thumb will prevent the disc from rotating, while the hand of the watch gets to the right position to take the time. By releasing the pressure, the disc is liberated for counting the revolutions of the shaft, when every 100 may be noted by feeling the knob pass under the thumb lightly pressed against it, thus relieving the eye, which has only to look on the watch to note the time.

The instrument is nickel-plated, and has a rubber handle, so that it will not heat the fingers when run at high speed. Every indicator is warranted first-class.

.....\$1.85 Price . 

Sent without case unless otherwise ordered.



This instrument was devised to automatically register hundreds as well as units and tens, and thus relieve the mind from keeping tally; also to furnish a better registering indicator at a more reasonable cost than has been on the market heretofore. The instrument will register 5,000 revolutions. The large dial is graduated into one hundred lines, each one representing a revolution of the spindle.

The small dial has fifty lines cut upon its face, each representing one hundred revolutions of the spindle (or one complete turn of the large dial). A spring finger trip attached to the case engages with one of the lines in

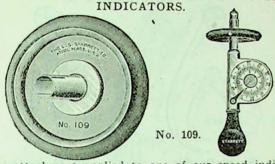
the small dial, and holds it from revolving until the large dial makes one complete turn, when the trip pin passing under the spring trip fits it, and the dial is frictionally carried along by the large plate one line, thus showing that one hundred revolutions of the spindle have been made. The instrument has a hard rubber handle, making a safe insulator when used on electrical machinery, Nickel-plated. 

Sent without case unless otherwise ordered.

152 P. C.

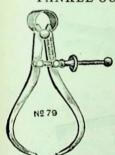
158 P. C. (F) Goods marked (F) not carried in stock, can be furnished from factory. (F)STARRETT TOOLS.

# SURFACE SPEED ATTCHMENTS FOR SPEED

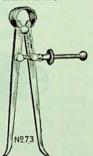


This attachment applied to one of our speed indicators is designed to show the number of linear feet per minute the periphery of a shaft or pulley is running, and thus enable a workman to know if the speed is too fast, or is too slow to get the most work the tool will stand. For instance, the speed of a cone pulley being turned needs to be changed at every step. Heretofore it has been all guesswork as to the number of feet per minute the periphery of the work is traveling. It may be so fast as to heat and spoil the tool, or it may not be nearly fast enough to perform what should The same is true when shifting the tool from the be done. hub to the rim of a pulley. The rubber-banded indicator wheel may be instantly slipped off or on the spindle of any of our speed indicators, and when held against the periphery of a shart or pulley a half minute or a minute, by dividing the figures showing the revolutions on the dial of the indicator by 2, the number of feet the surface of the thing is traveling is obtained, as each revolution of the indicator wheel shows six inches; twice around, one foot. A close approach to accuracy is not claimed for this attachment, but it will be found very convenient and adequate for the purposes intended, as suggested above.

### YANKEE OUTSIDE AND INSIDE CALIPERS.



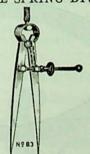
No. 73 represents Yankee Inside Transfer Caliper, with either spring or solid nut. The bow is stiff, making the Caliper reliable. After calipering inside chambered cavity by springing in the legs, they may be withdrawn, and as they spring back will show the exact size calipered.



Prices	No.	79 o	r No.	73:
21/2-i1	ich,	with	solid	nut

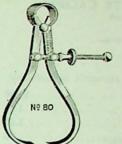
2½-inch, with solid nut\$0.80	with spring nut,	\$1.00
3 -inch, with solid nut85	with spring nut,	1.05
4 -inch, with solid nut90	with spring nut,	1.10
5 -inch, with solid nut 1.00	with spring nut,	1.15
6 -inch, with solid nut 1.05	with spring nut,	1.20
Sent with solid nut unless otherwise	specified.	

### YANKEE SPRING DIVIDERS.



rices No. 83:	14,83			
21/2-inch, wit	h solid nut	\$0.80 with	spring nut,	\$1.00
3 -inch, wit	h solid nut	.85 with	spring nut,	1.05
4 -inch, wit	h solid nut	.90 with	spring nut,	1.10
5 -inch, wit	h solid nut	1.00 with	spring nut,	1.15
6 -inch. wit	h solid nut	1.05 with	spring nut.	1.20

156 P. C.

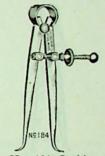


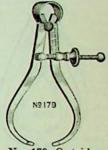
### YANKEE THREAD CALIPERS. Prices No. 80: 3-inch, with solid nut.....\$1.05 With spring nut..... 1.20 4-inch, with solid nut..... 1.10 With spring nut..... 1.30 5-inch, with solid nut..... 1.15 With spring nut..... 1.35

Sent with solid nut, unless other-

### INSIDE AND OUTSIDE THREAD CALIPERS.

wise ordered.





No. 184, Inside.

No. 179, Outside.

These calipers are designed for measuring the diameter at bottom of threads.

P	r	i	ce	e	a	c	h	:	
		٠						ric.	í

4-inch, with solid	nut\$0.90	with spring nut,	\$1.10
5-inch, with solid	nut 1.00	with spring nut,	1.15
6-inch, with solid	nut 1.05	with spring nut	1.20
Sent with solid	nut, unless otherwise	ordered.	

### IMPROVED FIRM JOINT CALIPERS.





No. 26, Outside.

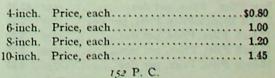
The improvement in these calipers consists in the construction of the joint, which is so made as to be drawn together by means of a screw. The main stud is squared and fitted to one leg, thus preventing the stud from turning when loosening and tightening, and insuring a smooth and uniform friction of more or less tension to suit the user.

The quality of these calipers is incomparably superior to

chat of any old style liveted je	and camper on the market.
Price, each:	6-inch\$0.80
3-inch\$0.50	S-inch 1.00
4-inch	10-inch 1.10
5-inch	12-inch 1.20

### FIRM JOINT HERMAPHRODITE CALIPERS

These calipers have our adjustable point, as well as the improved firm-joint. This joint, with its smooth and uniform friction, is incomparably superior to the old-style riveted joint.





No. 41.

(F) Goods marked (F) not carried in stock, can be furnished from factory.

### (F)STARRETT TOOLS.

### FIRM JOINT HERMAPHRODITE CALIPERS.

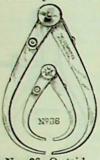


No. 42.

With adjustable point, lock-joint and sensitive adjustment.

4-inch.	Price,	each		 										 	\$1.20
6-inch.															
8-inch.															
10-inch.	Price,	each.		 											1.95

### LOCK JOINT TRANSFER CALIPERS.





No. 36, Outside.

No. 37, Inside.

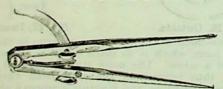
These instruments (Nos. 36 and 37), not only have all the excellent features of Nos. 38 and 39, as described below, but in addition to common use, may be used inside of chambered cavities, over flanges, etc., removed and replaced without losing the size calipered. This is done by loosening the nut binding one arm to the auxiliary leaf and swinging it out or in (while the joint is locked) to clear the obstruction, then moving it back against a stop where it will show the exact size measured.

The sizes given refer to the length of the calipers, but the outside ones will caliper a cylinder 20 per cent larger than their length, and the inside calipers will open nearly twice their length.

4-inch. Price, each..\$1.50 8-inch. Price, each. \$2.10 5-inch. Price, each.. 1.70 10-inch. Price, each.. 2.40 6-inch. Price, each. . 1.80

156 P. C.

# WING DIVIDERS.



No. 35-Forged Steel, Polished.

5-in.	Each	0.50	10-in.	Each	\$0.90
6-in.	Each	.50	12-in.	Each	1.00
Q in	Fach	65	P.T. DA		

5 to 8 inches, one dozen; 10 and 12 inches, half-dozen in box. 108 P. C.

### FILE HANDLES.



With Brass Ferrules.

No. 1.	For Saw Files. Price, per doz	\$2.25
No. 2.	For 8 and 10-inch Files. Price, per doz 1753	2.25
No. 3.	For 12-inch Files. Price, per doz	2.25
No. 4.	For 14-inch Files. Price, per doz	2.25
No. 5.	For 16-inch Files Price per doz	2.25

### LOCK JOINT CALIPERS.





No. 38, Outside.

No. 39, Inside.

Can be instantly adjusted to their full extent, and as quickly locked firm in the joint, and yet provided with a sensitive adjustment. The improvement consists, first. in a socket joint made tapering and locked or released by a partial turn of the knurled disc, drawing it together. A spring washer under the disc maintains an easy friction in the joint when unlocked.

To further describe, in the under side of short arm, is a slot containing a stiff spring. Riveted into the middle leg and projecting through an opening in the arm, is a threaded stud, on which is a knurled nut having a beveled hub—this bears against a cone in the arm-the action of the spring holding them together turns the nut, presses them apart, and adjusts the leg when the joint is locked. The spring taking up all backlash, the legs are firm.

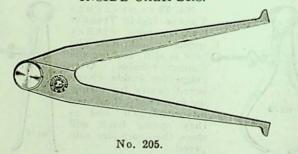
4-inch.	Price,	each	\$1.10	8-incl
5-inch.	Price,	each	1.15	10-inch
6-inch.	Price,	each	1.20	

h. Price, each..\$1.50

h. Price, each.. 1.80

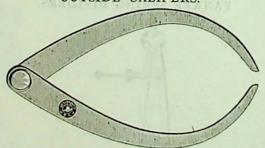
152 P. C.

### INSIDE CALIPERS.



2-in.	Each183	\$0.20	6-in.	Each 257	\$0.40
3-in.	Each186	.30		Each302	
4-in.	Each202	.30	10-in.	Each409	.60
5-in.	Each208	.30	12-in.	Each	.70

### OUTSIDE CALIPERS.

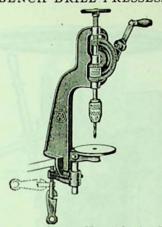


No. 210.

2-in.	Each182	\$0.24	6-in.	Each253	\$0.40
3-in.	Each187	.24		Each306	
4-in.	Each204	.30	10-in.	Each409	.60
5-in.	Each208			Each 462	

(F) Goods marked (F) not carried in stock, can be furnished from factory.

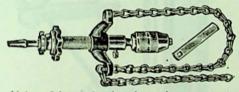
### BENCH DRILL PRESSES.

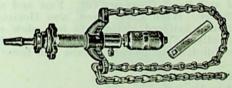


Strong cast iron standard. Hand feed. Height over all, 24 inches. Maximum distance from chuck to table, 9 inches. Weight, boxed, 27½ pounds, net, 22 pounds. Capacity, 0 to ½-inch.

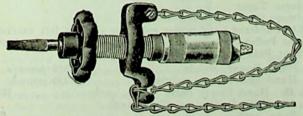


### CHAIN DRILLS.

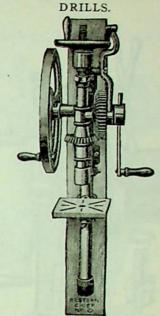




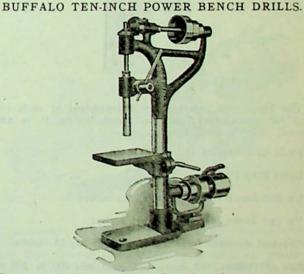
### WONDER DRILLS.



Style C. Fitted with Universal Chuck, Will hold up to ½-inch round and bit stock bits. Price, each....\$3.00



# List Net.



Three-speed, 3-step pulley. One-piece frame, gears machined and fitted. Normal speed of countershaft, 600 revolutions. Spindle speed on high, 850 revolutions; intermediate, 470; low, 260. Countershaft with tight and loose pulleys and belt shifter.

Specifications.

Drills to center of 10" circle.

Drills holes up to \(\frac{1}{36}\)".

Greatest distance between base and spindle, 16".

Greatest distance between table and spindle, 9\(\frac{9}{4}\)".

Travel of spindle, 3\(\frac{1}{2}\)".

Diameter of spindle in sleeve, \(\frac{3}{4}\)".

Size of table, 7x8".

Diameter of column, 2\(\frac{1}{2}\)".

Size of tight and loose pulleys, 4x1\(\frac{1}{6}\)".

Diameter of crown gear, 2\(\frac{7}{4}\)".

Smallest diameter of cone pulley, 3".

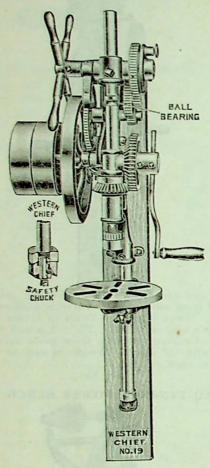
Largest diameter of cone pulley, 4\(\frac{1}{2}\)".

Face of cone pulley, 1\(\frac{1}{6}\)".

Height over all, 33\(\frac{1}{2}\)".

Weight, 110 lbs.

### DRILLS



No. 19.

The Hand and Self-feed are independent of each other, and for quick work, such as wood boring, it is unsurpassed, as bit is quick-lifted.

Drills to center of 161/2-inch Circle.

Bores 0 to 11/4-inch.

Up and Down run of Spindle, 51/2 inches.

Up and Down run of Table, 11 inches.

Greatest distance from Table to Spindle, 14 inches.

Size of Pulleys, 8x2 inches. Should run 190 to 200 revolutions per minute.

Spindle bored for 1/2 to 11-inch shank bits. Always state size when ordering.

When ordered hand power only, the shaft is left extended, so that pulleys may be placed at any time.

Always shipped without Pulleys, unless ordered.

Wheel Rims can be drilled by removing Table, and using the forked support as a holder.

No. 19. Hand Power only. Price, each.....\$24.55

No. 19. With Pulleys (as illustrated). Price, each.... 28.60 List Net.

BALL BEARING WESTERN

A Post Drill with the fine features of Machine Shop Floor Drills

Straight and Bevel Gears are cut. Fast and slow speed, instant change. Hand Lever Feed, also Horizontal Geardriven Positive Self-feed, changed to fast, slow or medium speed instantly. These feeds work independently of each other, and bit is lifted quickly. Raise and lower device to

Drill to center of 24-inch circle.

Bores 0 to 11/2 inches.

when ordered, extra.

Up and Down run of Spindle, 6¼ inches. Up and Down run of Table, 15½ inches.

Greatest distance from Table to Spindle,  $18\frac{1}{2}$  inches. Size of Pulleys,  $10\frac{3}{4}$ x $2\frac{1}{2}$  inches.

Should run 175 to 180 revolutions per minute.

Spindle bored for ½ or ‡¼-inch shank bits, or No. 1, 2 or 3 Morse Taper.

Always state size when ordering.

When ordered hand power only, the shaft is left extended, so that Pulleys may be placed at any time. Always shipped without Pulleys, unless ordered.

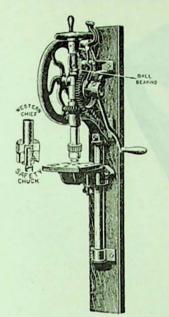
Hand Power, weighs......343 pounds. Hand and Power, weighs......399 pounds.

No. 16. Hand Power only. Price, each........\$61.00 No. 16. With Pulleys (as illustrated)—

Wheel-holding Attachment, as illustrated, is furnished,

List Net.

DRILLS.



No. 3.

Automatic Self-feed.

Drills to center of 14½-inch circle.

Bores 0 to 1-inch.

Up and Down run of spindle, 3½ inches.

Up and Down run of Table, 15½ inches.

Greatest distance from Table to Spindle, 14½ inches.

Size of Pulleys for Power, 8x2½ inches.

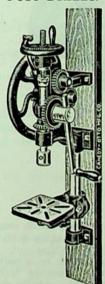
Should run 250 revolutions per minute.

Spindle bored for ½ or ¼-inch shank bits.

Always state size when ordering.

Weight, 95 pounds.

POST DRILLS.

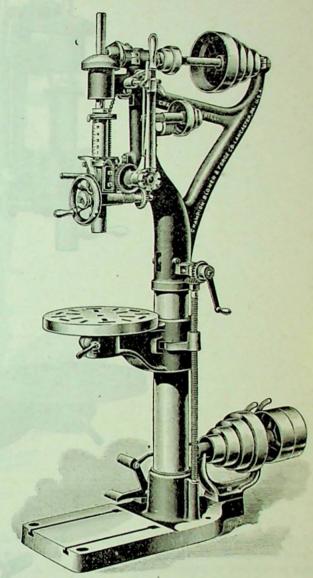


Bearings are bored and reamed from solid metal, two speed, fast and slow; self variable speed; bores 0 to 1½ inches; drills to center of 14¾-in. circle; up and down run of spindle, 3½ inches; up and down run of table, 11 inches; greatest distance from table to spindle, 11 inches; takes bits with ½-in. shanks. Net weight, 93 lbs.; crated weight, 105 lbs.

No. B. B. Price, each......\$13.85

List, Net.

20-INCH UPRIGHT POWER.



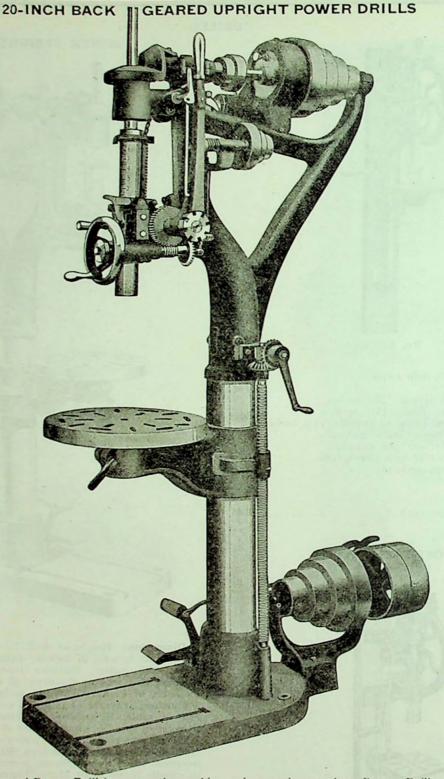
Dimensions—Height of drill, 75 inches; distance between Table and Spindle, 27 inches; distance between Spindle and Base, 42¼ inches; distance from column to center of Spindle, 10¼ inches; diameter of Crown Gear, 5¼ inches; diameter of Pinion Gear, 3¼ inches; diameter of Column, 5¼ inches; traverse of table on column, 18½ inches; diameter of table, 16 inches; diameter of spindle, 1¼ inches; traverse of spindle, 8 inches; size of Tight and Loose pulleys, 8x2¾ inches; size of Cone pulleys 4 step 45¾-7½-9x2-inch face; speed of driving pulleys, 300 R. P. M.; floor space required, 16x46 inches; horse power required, 1 horse; hole in spindle bored to fit Morse Taper No. 4.

With Lever, Wheel and Power Feed, Automatic Stop

Graduated Spindle as shown. Weight 800 lbs.

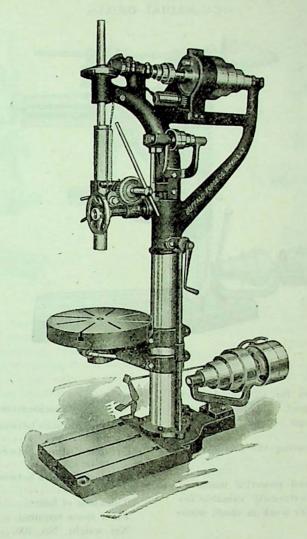
With Lever and Wheel Feed only. Weight 770 lbs.

With Lever Feed Only. Weight 750 lbs....126508 220,00



The 20-inch Back Geared Power Drill is a most thoroughly modern and up-to-date Power Drill, combining all the good features that a machine of its kind ought to have. It combine simplicity and speed in operation with strength and rigidity, and drills with perfect accuracy from the smallest hole up to 1½-inch. The gears are machine cut. The bearings are all large and powerful. The change from a plain drill to a back geared drill is done in an instant by a movement of an eccentric shaft. The drill is made with a square base; has eight speeds, with three distinct and complete feeds—power feed, hand wheel feed, and lever feed. It is supplied with all the graduated and automatic features. The spindle is counterbalanced by a weight in the hollow column; has automatic stop, with quick return lever, giving rapid movement to the spindle. Has quick action screw for raising and lowering the table.

(F) BUFFALO 25-INCH BACK GEARED UPRIGHT POWER DRILLS.



This machine is designed in every respect to do accurate and efficient work. It has eight speeds and four power feeds, also hand and lever feeds. Can be instantly changed from plain to back geared drive without using wrench, by disengaging knurled knob in the top gear and throwing in back gears by means of hand lever. A locking screw is also provided to hold this in place.

Adjustable automatic trip throws out power feed instantly when piece has been drilled to required depth.

All bearings split and adjustable for wear; ball thrust bearing; graduated sleeve; ground spindle; lever handle is adjustable from 6 to 18 inches and is held in place by tension spring. Worm feed wheel runs in oil and is latch-hinged to take up wear; all gears machine cut and they are made extra heavy. Large crown gears run in heavy bronze bushing; the screw that operates table has ball thrust and is lathe turned; table-arm drilled by machine itself—this insures accuracy; base and table T-slotted and planed.

Only experienced and careful workmen are employed on these machines, and all parts are accurately fitted.

### Specifications.

Height of Drill, 85 inches.

1½-inch Hole to Center, 25 inches.

Circle, greatest distance between Base and Spindle, 44% in.

Greatest distance between Table and Spindle, 31 inches.

Travel of Spindle, 14½ inches.

Diameter of Table, 21 inches.

Size of Tight and Loose Pulley, 10x3½ inches.

Speed of Drive Pulleys, 300 r. p. m.

Smallest Diameter of Cone Pulley, 4 inches.

Largest Diameter of Cone Pulley, 10 inches.

Depth of Cone Pulley Steps, 3½ inches.

Four Feeds, .005—.007—.009—.016.

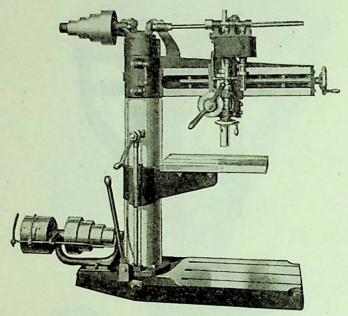
Style, 25-inch B. G. with Wheel and Automatic Feed and Stop.

Net Weight, 1,550 pounds.

Crated Weight, 1,775 pounds.

Regularly furnished for No. 3 or No. 4 Morse Taper Drills.

### (F) C-O RADIAL DRILLS.



Model 101.

These are very valuable machines for all-around work. All parts are strong, simple and compact. The best of material and workmanship used throughout.

All machines are tested before leaving the factory, and guaranteed in every respect.

These drills are very accurate and powerful machines. They embody many exclusive and extremely valuable features, and are particularly adapted for work in shops where

### a Radial Drill is a necessity.

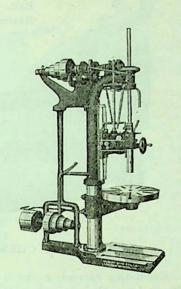
The arm can be swung to any degree within a half circle, and can be securely clamped.

The spindle head can be traversed along the arm by means of hand wheel screw, and can be firmly clamped in any position.

	Arm		rm
Specifications. 21	/2-ft.	31/2	ft.
Height of drill to top of spindle72	in.	72	in.
Floor to top of column64	in.	64	in.
Drills to center of circle outside of column	in.	84	in.
Greatest distance center of spindle to column	in.	42	in.
Shortest distance center of spindle to column	in.	7	in.
Vertical traverse of spindle 9	in.	9	in.
Diameter of spindle inside of sleeve 1	in.	15	in.
Diameter of column in arm 5%	s in.	5%	s in.
Diameter of column below arm 75	% in.	75/	s in.
Length of base from column33	in.	45	in.
Width of top of base22	in.	22	in.
Distance from column to end of table.26	in.	26	in.
Greatest distance between spindle and base	in.	36	in.

	Arm 2½-ft.	Arm 3½-ft.
Specifications.	0 to 1½ in.	0 to 11/2 in.
Shortest distance between spindle as		
base		27 in.
Greatest distance between spindle as	23½ in.	23½ in.
Shortest distance between spindle at table		4 in.
Thickness of base		4 in.
Floor space required		24 x 80
Net weight, No. 100		1685 lbs.
Net weight, No. 101		1700 lbs.
Crated weight, No. 100		1885 lbs.
Crated weight, No. 101		1945 lbs.
1½ H. P. required to operate.		
Size of table, 16x24.		
Size of cone pulley, 81/8, 71/4, 5	%,	
4x2¾ inch face		ame
Diameter of tight-and-loose pulley		ame
Speed of countershaft		
Spindle No. 3, Morse Taper, will co	The second second second	
Model No. 100 is equipped for han	d lever feed	only.
The spindle has a quick return he to the regular hand feed lever on No.		n addition
Model No. 101 has power feed and	d automatic	stop.
Self-feed has four speeds driven by	four-step ge	ar cone.
Can be conveniently changed by m	eans of slidin	g collar.
Model No. 100. Hand Lever Feed, Price, each, F. O. B. Factory	2½ ft. arm.	\$490.00
Model No. 100. Hand Lever Feed, Price, each, F. O. B. Factory	31/2 ft arm	
Model No. 101. Power Feed, 2½ ft. • Price, each, F. O. B. Factory	arm	
Model No. 101. Power Feed, 3½ ft.	arm	500.00
Price, each, F. O. B. Factory		617.00

C-O 25-inch Sliding Head Drills.



All high-duty Gears are steel heat treated and completely enclosed, bearings are of phosphorous bronze and high-grade composition bearing material, being of extra heavy length. Table heavily ribbed, revolving on its spindle, adjust vertically and swings to either side of column, All levers are arranged that tapping attachments and back gear can be controlled from the front of machine. Quick change position feed has seven changes, ranging from .003 to .095 revolutions of spindle.

### Specifications.

Height over all, 84", drills to center of 25". Greatest distance from spindle to table, 37". Greatest distance from spindle to base, 50". Spindle travel, 111/4". Sliding head travel, 20". Table travel on column, 19". Hole in spindle, Morse taper No. 4. Dia. of spindle in sleeve, 15/8". Smallest dia. of spindle, 1 nd". Dia. of sleeve, 21/8"; dia. of column, 61/2". Dia. of table, 23". Dia. of tight and loose pulleys, 10". Width of tight and loose pulleys, 3" Speed of tight and loose pulleys, 250 R. P. M. No. of steps in cone, 4. Largest step diameter, 10" Smallest step diameter, 4". Spindle Speeds with Back Gear engaged, 10-19-33-63 R. P. M. Spindle Speeds without Back Gear engaged, 40-76-132-250 R. P. M. Feed per rev. of spindle, Low Gear, .003-.005-.007-.009. Feed per rev. of spindle, High Gear, .011-.013-.0165. Dia. of crown gear, 81/2".

Floor space, 22x65".

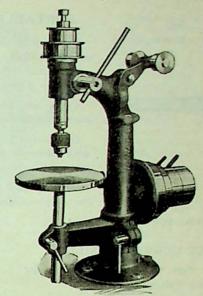
Net Wt., lbs., 1570. Wt. crated, lbs., 1820.

Price, each, with plain lever feed ......\$127.00

Price, each, with wheel and lever feed ...................... 132.00

Price, each, with wheel, lever and power feed ...... 158.00

BUFFALO 10" JUNIOR DRILLS.



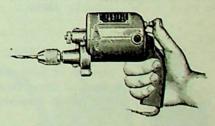
sturdy bench drill, for accurate and small work, spindle runs in a large bronze bushing, possible to change from one speed to another without loosening the idler.

10" Junior Drill Specifications.

Height, 271/2" Greatest distance spindle to table, 8". Vertical movement of spindle, 31/2' Vertical movement of table, 7". Diameter of table, 8". Distance center of spindle to frame, 5\%".

Drilling capacity, 0" to \( \frac{3}{6}\)". Tight and loose pulleys, 4"x15%" Speed of driving pulleys, 550 R. P. M. Net weight, 65 lbs. Shipping weight, 90 lbs. Spindle fitted with 2-A Jacobs chuck. Price, each, with 2-A Jacobs chuck...........28503 \$35.00 

### ONE-HANDY ELECTRIC DRILLS.



Capacity 1/4-inch in any material. Balances perfectly in one hand.

Specifications.

LENGTH-8 inches. WEIGHT-3 pounds. (Lightest motor-driven drill on market)

HOUSING-Aluminum Die-Casting. MOTOR-Westinghouse, Universal Type, 110 volt A. C. and D. C. Ample power, controlled by switch always under thumb. Air cooled. CAPACITY-14-inch drill and smaller.

GRIP—In direct line with chuck—gives straight line pressure on drill bit. Designed after pistol grip, fits hand

GEARS-Chuck spindle gear of bronze, driven from a

spiral-cut steel pinion, integral with armature shaft.
EQUIPMENT—Six feet of cord with separable plug and three-jaw wrenchless chuck taking Quarter Inch Drill Bits and smaller.

Price, each, with back gear wheel and lever feed ..... 163.00 Price, with Godell-Pratt chuck.....32401 \$36.00 List Net.

# Ball Bearing Haustration shows 16-in.

and 1/4-in, sizes.

### "STANDARD"

### PORTABLE ELECTRIC DRILLS

These drills are the highest quality throughout. Ball bearings are encased in grease in dustproof chambers and motors are impregnated in Bakelite. Every tool is guaranteed.

Gears are generated from special grade of steel, case-hardened and run in grease.

On ½-inch and smaller sizes, 10 feet of cord with connector is furnished. On larger sizes, 20 feet with connector is furnished.

The weights given are net. 100 per cent should be added to these for shipping weight.



fe-in, Hand Drill.

### DIRECT CURRENT DRILLS.

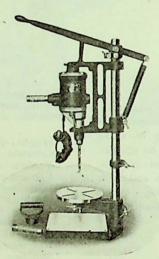
One-half-inch Size and Larger Wound for Any Voltage up to 650.

These drills have variable speed which regulates automatically according to size of twist drill used up to maximum capacity.

All direct current drills will run off lamp socket or power circuit of same voltage. They have an excess of power over and above rated capacity, preventing overloads and burnouts.

### 110 to 220 'Volts,

		Drilling		Ream-		
	Speed		acity	ing	Wt	Price.
Type.		Steel		Cap.		Each
	A PARTY OF THE PAR					
1SI	1,000	re-in.	1/4-in.		6	\$50.00
2SI	900	1/4-in.	3/s-in.		7	55.00
21/2S	800	re-in.	1/2-in.		8	70.00
3SI	700	3/s-in.	5/s-in.	1/4-in.	14	70.00
4SI	450	1/2-in.	3/4-in.	3/s-in.	20	80.00
5SI	400	5/s-in.	%-in.	1/2-in.	26	90.00
6SI	300	3/4-in.	1 -in.	1/2-in.	28	100.00
7SI	250	7/s-in.	11/4-in.	%-in.	35	110.00
8SI	200	1 -in.	11/2-in.	3/4-in.	40	120.00
10SI	175	11/4-in.	2 -in.		45	130.00
			1			



# COMBINATION PORTABLE BENCH STAND.

No. 1.	For	3/s-inch	
Drills		\$	32.50
No. 2.	For	1/2-inch	
Drills			32.50

### ALTERNATING CURRENT.

Alternating current, 2 and 3 phase drills, 60 cycles. Also furnished for lower frequencies down to 40 cycles. Speed given is based on 60 cycles. Wound for any voltage up to 440. All drills fitted with cord and connector for power lines.

### 110 to 220 Volts.

			lling		
			acity		
Type.	r.p.m.	Steel.	Wood.	Lbs.	Each.
2SAI			3/s-in.	7	\$60.00
21/2SAI	700	ro-in.	½-in.	9	65.00
3SAI	600	3/s-in.	5/8-in.	17	75.00
4SAI	. 400	1/2-in.	3/4-in.	20	90.00
5SAI	350	5/s-in.	7/8-in.	26	95.00
6SAI	. 300	3/4-in.	1 -in.	28	110.00
7SAI	. 250	7/s-in.	11/4-in.	35	120.00
10SAI	. 135	11/4-in.	2 -in.	45	140.00



### 

# UNIVERSAL DRILLS, 110 OR 220 VOLTS. Operate on both single phase, alternating current, 60 cycle less and direct current of same voltage. Lamp socket or

Operate on both single phase, alternating current, 60 cycle or less and direct current of same voltage. Lamp socket or power circuit connection. Variable speed.

			Dr	illing				
		Speed	Cap	acity	Reaming	Wt	Price,	
Typ	e.	r.p.m.	Steel	Wood	Capacity	Lbs	s. Each.	
U		1,000	18-in.	1/4-in.		6	\$55.00	
2U		900	1/4-in.	3/s-in.		7	60.00	
21/2		800	re-in.	1/2-in.		8	65.00	
3U		700	3/8-in.	5/8-in.	1/4-in.	14	75.00	
4U		450	1/2-in.	3/4-in.	3/8-in.	19	88.00	
5U		400	%-in.	%-in.	17g-in.	26	95.00	
6U		300	3/4-in.	1 -in.	1/2-in.	28	110.00	
7U		250	%-in.	11/4-in.	5/8-in.	35	120.00	
8U		200	1 -in.	13/4-in.	lt-in.	40	130.00	
10U		175	11/4-in.	21/2-in.	3/4-in.	48	140.00	

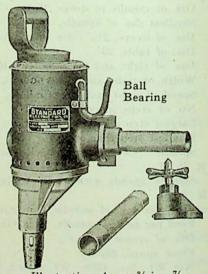


Illustration shows \(^3\)4-in., \(^7\)8-in., 1-in. and 1\(^1\)4-in. sizes.

\*Always specify voltage on which you will operate electric tool. State whether it is 110 or 220 volts.

(F) Goods marked (F) not carried in stock, shipment from factory.

List, Net.

MODEL "A" DRILL.

(For Light Service)

garages, service stations, wood and metal working shops. Very useful for drilling small

holes required in mounting

auto accessories, and also for

drilling name plate and oiler

holes. Designed for intermittent drilling service only, in light metal and wood. It has

Universal Motor, off-set chuck

spindle, detachable side han-dle, and push button type

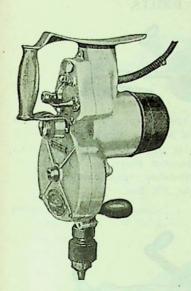
switch, mounted in easy reach

of operator's hand. Regular Equipment—1/4-inch capacity

chuck, 10 feet of cable and plug. Specifications—Length plug. Specifications—Length with chuck 13 inches. Speed running idle 1,800 r. p. m. Net weight 9 lbs. Shipping weight

Capacity 0 to 1/4" in Steel.
A light service Drill for

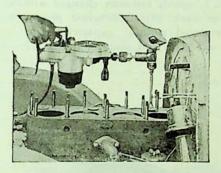
### TEMCO ELECTRIC DRILLS



MODEL "B" DRILL. (For Light Service)

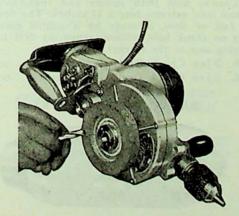
Capacity 0 to 3/8" in Steel. Especially designed for handling repair work where only intermittent drilling service is required. An ideal Drill for garages, repair shops, plumbers, and sheet metal workers. Fitted with single control switch that starts, stops and reverses the drill chuck instantly. It has Universal Motor mounted on highgrade ball-bearings. Regular Equipment-%-inch ca-pacity Jacobs Chuck, 10 feet of cable and plug. Specifications-Length with Chuck 15 inches. Speed running idle 1,200 r. p. m. Net weight 14 lbs. Shipping weight 20 lbs.

Price with Regular Equipment.....\$56.00



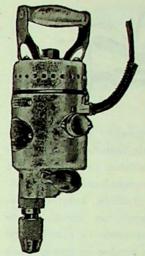
Model B. Showing Valve Grinding Attachment. Grinding Attachment operates from the chuck of the drill; has an oscillating movement that eliminates all danger of grooving the valve seat. Both a blade and forked stem are furnished with this attachment.

Valve Grinding Attachment. Price, each......\$6.00



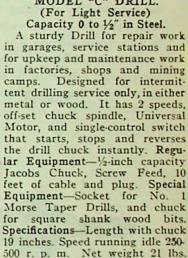
Model B. Showing Emery Wheel Attachment. A convenient device for sharpening drill bits, taps and small tools, where the work is being done.

Emery Wheel Attachment. Price, each......\$2.00

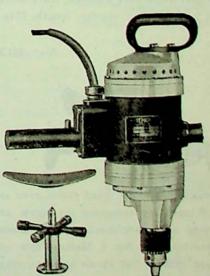


17 lbs. Price with Regular Equipment.....\$42.00

MODEL "C" DRILL.



Shipping weight 35 lbs. Price Chuck for Wood Bits.....



MODEL "K" DRILL. (For Hard Service) Capacity 0 to 1/2'

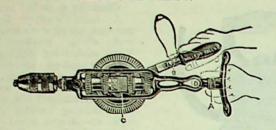
Of great value to shops, mills and factories for rapid production work. Off-set chuck spindle, Universal Motor, quick brake type switch under operator's thumb. Regular Equipment-1/2-inch Jacobs geared chuck, 2 side handles, screw feed, breast plate, grip handle, and 15 ft. of cable and plug. Length over all 17 inches. Speed running idle

500 r. p. m.; under load 300 r. p. m. Net weight 22 lbs. Shipping weight 35 lbs.

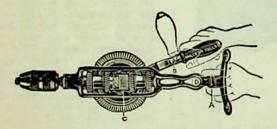
Model K. Price, each ......\$92.00

List Net.

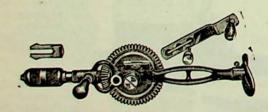
BREAST DRILLS.



No. 97. Ratchet, three-jaw two speeds; most complete breast drill made; strong, durable, foolproof; five ratchet actions: (1) ordinary, (2) right-hand ratchet, (3) lefthand ratchet, (4) continuous right-hand ratchet, (5) continuous left-hand ratchet; turning knurled sleeve operates ratchet; pressing knob on crank handle changes speed instantly; unnecessary to remove drill from work when shifting either ratchet or speed; erank handle adjustable to straight lever position; breast plate has hand-hold for steadying tool; take up nut to overcome any wear on ball-bearings; chuck, three-jaw, protected springs; capacity, 0 to 1/2-in. round shanks; speed ratios, even and 234 to 1; double gear drive; cut gears and pinions; ball thrust bearings; large auxiliary breast plate; detachable side handle; length 171/2-in.; weight, 81/4 lbs.



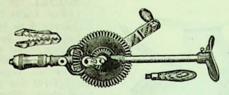
No. 87. Ratchet, two-jaw, two speeds; same as No. 97, except has master jaws which take Bitstock, No. 1 Morse Taper and Round 1/8-in. to 1/2-in. shanks; length, 17-in.; weight, 8 lbs.



No. 12. Two-jaw chuck, two speeds; speed ratios, even and 3 to 1; speed changed by removing set screw and shifting large gear; adjustable breast plate; master chuck which takes bitstock, No. 1 Morse Taper and round ½-in. to ½-in. shanks; ball thrust bearings; crank handle extensible, 4-in. to 6-in.; cut gears and pinion; idler roll to equalize bearings; level attached; length 17½-in.; weight, 6½ lbs.

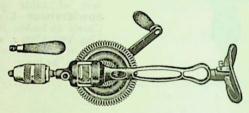
Price, each......4353 \$5.75

BREAST DRILLS.

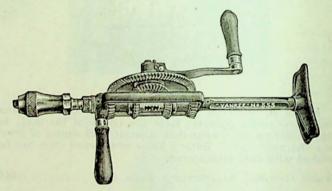


No. 19. Two-jaw chuck, two speeds; speed ratios, even and 3 to 1; speed changed by pressing spring and shifting large gear; chuck, alligator jaws for bitstock shanks only; ball thrust bearings; cut gears and pinion; adjustable breast plate; adjustable crank handle, 4-in. to 7-in.; length, 18-in.; weight, 614 lbs.

Price, each ......3504 \$4.50



No. 2100. Three-jaw chuck, two speeds; speed ratios, even and 3 to 1; speeds instantly changed without removing drill from work; adjustable breast plate; chuck, three-jaw; protected springs; capacity, 0 to ½-in. round shanks; cut gears and pinions; length, 17½-in.; weight, 5¾ lbs.



With right and left hand and continuous ratchet movement. Chucks hold both square and round-shank drills, ½-inch and less; extreme length 17 inches. The double speed change, fast or slow, is made by a simple movement of the lever on crank hub, without removing drill from work, or changing any of the ratchet adjustments.

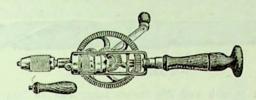
No. 555. 2-Jaw Chuck Drill. Price, each.....9009 \$10.50 No. 1555. 3-Jaw Chuck Drill. Price, each.....9003 10.50

### BREAST DRILL CHUCKS.



No. 153. ½-in., two-jaw; master chuck which takes bitstock, No. 1 Morse Taper and round ½-in. to ½-in. shanks; converts any Millers Falls three-jaw breast or bench drill into two-jaw type; weight, 13 ozs.

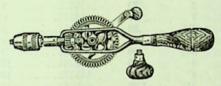
### HAND DRILLS.



No. 980. 3/8" Chuck-Two Speeds.

Speed ratios 1½ to 1 and 4 to 1. Speed shifted without removing drill from work.

Mushroom shaped hollow handle.
Chuck—Three-jaw. Protected springs.
Capacity 0 to %" round shanks.
Cut gears and pinions.
Ball thrust bearings. Idler gear.
Detachable side handle.
Length 15%". Weight 3% lbs.



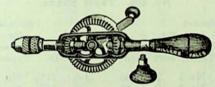
No. 105. 1/4" Chuck-Single Speed.

Cocobolo hollow end handle with eight wood-boring points.

Chuck—Three-jaw. Protected springs.
Capacity 0 to ¼" round shanks.
Cut gear and pinion.
Adjustable equalizing bearing.
Ball thrust bearings.

Detachable side handle. Length 12½". Weight 1¾ lbs.

Price, each ......2856 \$3.55



No. 5. 18" Chuck-Single Speed.

Cocobolo hollow end handle with eight wood-boring points. Large gear with ½" rim.

Double pinions. Gear and pinions cut.

Chuck—Three-jaw, springless.

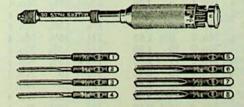
Capacity 0 to ¾" round shanks.

Ball thrust bearing.

Detachable side handle,

Length 12½". Weight 1¾ lbs.

### PUSH DRILLS.



No. 800.

Knurled steel handle. Magazine type with eight drill points.
Steel spirals. Bronze center nut.
Polished and nickel plated.
Length 10½". Weight 12 oz.

Price, each......2252 \$2.85

COUNTERSINKS.



For Use in Drilling Machines.



For Use in Bit Brace.

Stocked in three styles of shank: Bit Brace; 1/2-inch Round; and \$\frac{1}{4}\text{-inch Round.} Order by number.

For Bolts 54°, and Screws 82°.

	Wgt.	Price,
	Oz.	Each.
No. 501. %-in. diam., 54° Bit Brace	3	\$0.50
No. 502. %-in. diam., 54° 1/2-in. Round	3	.50
No. 503. %-in. diam., 54° 11-in. Round	3	.50
No. 504. %-in. diam., 82° Bit Brace		.50
No. 505. %-in. diam., 82° 1/2-in. Round		.50
No. 506. %-in. diam., 82° 11-in. Round	3	.50
No. 507. 34-in. diam., 54° Bit Brace		.75
No. 508. 3/4-in. diam., 54° 1/2-in. Round		.75
No. 509. 34-in. diam., 54° 11-in. Round		.75
No. 511. 34-in. diam., 82° Bit Brace		.75
No. 512. 34-in. diam., 82° 1/2-in. Round		.75
No. 513. 3/4-in. diam., 82° 11-in. Round		.75
List, Plus 103 P. C.		
2130, 1103 103 1. 0.		

STEEL SOCKETS.



No. 104 Sleeve or Shell Sockets. For Taper Shank Drills.

Size.	Has Hole.	Outside Fits.	Wgt. Lbs.	Each
No. 1 to 2	No. 1	No. 2	1/4	\$1.80
No. 1 to 3	No. 1	No. 3	1/2	2.40
No. 2 to 3	No. 2	No. 3	3/8	2.40
No. 3 to 4	No. 3	No. 4	3/4	3.00
No. 4 to 5	No. 4	No. 5	21/4	4.40
	2	154 P. C.		

### DRILL AND COUNTERSINK COMBINED.



No. 98A. For Blacksmiths' Use.

Letter	Diameter of Body.	Diameter of Drills.	Price, Per doz.
J1		372-inch	\$4.60
J2	½-inch	32-inch	4.60
J3	½-inch	11-inch	5.00
1/2-inch body we	ighs 2 ounces.		
%-inch body wei	ghs 3 ounces.		

# 256 P. C. CENTER REAMERS.



A tool highly appreciated by all machinists. Accurately made of best tool steel. Included angle, 50 degrees.

ank, Cut. Eac
18 1/4 \$0
1/4 3/8
3/4 1/2
3/4 5/4
1/2 3/4

### TWIST DRILL BITS



No. 108. Straight Shank Carbon Steel. No. 417. Straight Shank High Speed.

Diameter.	Length (Inches)	Price Per Doz.	Price Per Doz.	Diameter.	Length (Inches)	Price Per doz.	Price Per Doz.
		High Speed	Carbon Steel			High Speed	Carbon Steel
1	21/2	\$5.70	\$1.60	12	43/8	\$10.50	\$4.00
5.	2½ 25%	5.70	1.65	.5.	41/2	10.50	4.35
2	23/4	5.70	1.70	31	45/8	12.00	4.70
10 54 54 54 54 54 54 54 54 54 54 54 54 54	21/8	5.90	1.75	16 0 14 15 17 30 07 17 14 15 17 16 17 18 18 17 18 18 18 18 18 18 18 18 18 18 18 18 18	43/4	12.00	5.05
1/4	3	5.90	1.80	23	47/8	13.50	5.50
9	31/s	6.10	1.85	3/9	5	13.50	6.00
2/2	31/4	6.10	1.90	21	51/8	15.00	6.50
11	33/8	6.30	2.00	18	51/4	15.00	7.00
16	31/2	6.30	2.25	21	53/8	17.00	7.75
11	35/8	7.00	2.50	16	5½ 5%	17.00	8.50
372	33/4	7.00	2.75	22	55/8	18.75	9.25
15	37/s	7.35	3.00	38	53/4	18.75	10.00
1/4	4	7.35	3.25	81	57/8	20.00	11.00
17	41/8	9.10	3.50	1/2	6	20.00	12.00
1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4 1/4	41/4	9.10	3.80				

No. 108. Carbon Steel, 606 P. C. No. 417. High Speed, 451 P. C.



No. 110. Straight Shank. Long Set.

		D. C. L. B. C.		money o		
Diameter	Length,	Price.				
(Inches)	Over all.	Each.				
1/2	73/.	\$1.20	4.2		07/0	\$2.10
		110000000000000000000000000000000000000				
84	8	1.30	32.		91/8	2.10
\$2	8	1.30	ā1		10	2.20
84	81/4	1.40	18		10	2.20
re	81/4	1.40				2.40
84	81/2	1.50	37		101/4	2.40
38		1.50				2.60
82		1.60				2.60
5/8		1.60				2.80
11	9	1.70				2.80
33		1.70				3.00
£3	91/4	1.80	18.		103/4	3.00
tt	91/4	1.80	81		107/s	3.25
\$\$	91/2	1.90	31.		101/s	3.25
33	91/2	1.90				3.50
17		2.00				3.50
3/4		2.00				



No. 116. Blacksmith.

Shank \$\frac{1}{4}\$-inch diameter, commonly known as \frac{5}{8}\$-inch shank; 6 inches long; 2\frac{1}{4}\$-inch long Shanks.

	Wt.			Wt.		Wt.		
Diam	- each	, Price	Diam	- each	Price	Diam	- each	, Price
eter.	OZ.	Each	eter.	oz.	Each	eter.	oz.	Each
1/8	4	\$0.50	1/2	51/2	\$1.10	7/8	9	\$2.10
16 16 12	4	.55	37	51/2	1.15	32	10	2.20
re	4	.60	18	6	1.20	18	10	2.30
32	4	.65	32	6	1.25	31	11	2.40
1/4	4	.70	5/8	61/2	1.30	1	11	2.50
32 16	41/2	.75	31	61/2	1.40	110	12	2.70
16	41/2	.80	11	7	1.50	11/8	13	2.90
11	41/2	.85	33	71/2	1.60	13	15	3.10
3/8	5	.90	3/4	8	1.70	11/4	16	3.30
33	5	.95	35	8	1.80	1 %	18	3.60
70	5	1.00	18	81/2	1.90	13/8	18	3.90
3.5	51/2	1.05	32	9	2.00	11/2	21	4.50



No. 120. Blacksmith.

Shank  $\frac{1}{2}$ -inch and  $2\frac{1}{4}$  inches long, and all larger Drills than  $\frac{1}{16}$ , 6 inches entire length.

Diameter.	Wt. oz. each.	Price, each.	Diameter.	Wt. oz. each.	Price, each.
1/8	21/2	\$0.45	<del>11</del>	6	\$1.50
352	21/2	.45	33	6	1.60
16	21/2	.50	3/4	61/2	1.70
372	21/2	.55	52	$6\frac{1}{2}$	1.80
1/4	3	.60	13	7	1.90
32	3	.65	37	7½	2.00
16	3	.70	7/s	8	2.10
32	3	.75	38	81/2	2.20
3/8	31/2	.80	15	9	2.30
33	31/2	.85	31	9½	2.40
T6	31/2	.90	1	9½	2.50
35	4	.95	116	11	2.70
½		1.00	11/8	12	2.90
9	41/2	1.05	13	13	3.10
16 · · · · · · · · · · · · · · · · · · ·	41/2	1.10	11/4	14	3.30
32	5	1.20	1 76	15	3.60
5/s		1.30	13/8	17	3.90
32	$5\frac{1}{2}$	1.40	11/2	20	4.50
		604 F	. C.		

mitted accele



No. 106. Taper Shank.

			110.		Taper	Shank.			
		Socket					Socket		
		for	Wt.					Wt.	
Dia.	Lgth.	Morse	oz. P	rice,	D	ia. Lgth.			Price.
In.	In.	Taper.	each e	ach	I	n. In.	Taper.		each
1/8	E1/	NT. 1	0						
78 32	51/8	No. 1	2 :	\$0.45	13				\$4.25
32 16	53/8	No. 1		.45	13				4.50
7 32.	53/4 6	No. 1		.50	13	117/8		29	4.75
1/4	61/8	No. 1	2	.55	11	s 12	No.3	31	5.00
32	61/4			.60	13	2 121/8		32	5.25
32 16	63/8	No. 1		.65	13	4 121/2			5.50
11	61/2	No. 1		.70	13	2 141/8			5.75
3/8	63/4			.75	11	o 141/4			6.00
13	7		3	.80	13	14%			6.25
7	71/4	No. 1	31/2	.90	13				6 50
16					13			56	7.00
1/3	71/2 73/4		4	1.10	11	143/4		59	7.50
17			41/2		13			60	8.00
32	- 8	No. 1		1.30	11		No. 4		8.50
16	81/4			1.40	13				9.00
5/8	81/2			1.50	11				9.50
78 21 32	83/4				13			70	10.00
32	9	No. 2		1.70	15	/s 15½	No. 4	73	10.50
11 22	91/4			1.80	18	151/2	No. 4		11.00
32	91/2			1.90	1	15%	No. 4	78	11.50
3/4	93/4			2.00	18	15%	No. 4	80	12.00
35	97/8			2.10	13	4 16	No. 4	82	12.50
18	10	No. 2		2.20	18		No.4	83	13.25
37	101/4				11		No.4	88	14.00
7/8	101/2		151/2	2.60	13	3 161/4		90	14.75
32 15	10%				17			94	15.50
18	103/4	No. 3		3.00	13	2 161/2		100	16.25
31	10%				13		No. 4	102	17.00
1	11	No. 3		3.50	18	161/2	No. 4	104	17.95
132	111/8			3.75	2	161/			18.50
110	111/4	No. 3	25	4.00					

High

\$7.00

7.00

7.00

7.00

7.00

Speed,

Carbon

Steel,

2.75

2.75

2.75

2.75

per doz. per doz. \$2.75 \$7.00



Decimal

Diameter.

.2280 in.

.2210 in.

.2130 in.

.2090 in.

.2055 in.

Wire

Gauge

No.

No.	108-A	Carbon	Steel.
NIO	418	High S	need

Length

Over

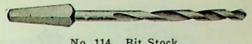
All. 4 in. 315 in.

315 in.

3 % in. 3 % in.

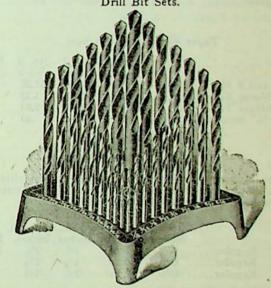
5	.2055 in.	313	in.	2.75	7.00
6	.2040 in.	313	in.	2.50	7.00
		33/4	in.	2.50	7.00
7	.2010 in.				
8	.1990 in.	311	in.	2.50	7.00
9	1960 in.	311	in.	2.50	7.00
10	.1935 in.	3 1/8	in.	2.50	7.00
11	.1910 in.	310	in.	2.25	6.30
12	.1890 in.	310	in.	2.25	6.30
13	.1850 in.	31/2	in.	2.25	6.30
					6.30
14	.1820 in.	317	in.	2.25	
15	.1800 in.	316	in.	2.25	6.30
16	.1770 in.	33/8	in.	2.00	6.30
17	.1730 in.	318	in.	2.00	6.30
18	.1695 in.	315	in.	2.00	6.30
19	.1660 in.	31/4	in.	2.00	6.30
20	.1610 in.	313	in.	2.00	6.30
	.1590 in.	318	in.	1.90	6.10
21					
22	.1570 in.	31/8	in.	1.90	6.10
23	.1540 in.	318	in.	1.90	6.10
24	.1520 in.	315	in.	1.90	6.10
25	.1495 in.	3	in.	1.90	6.10
26	.1470 in.	218	in.	1.80	6.10
27	.1440 in.	215	in.	1.80	6.10
28	.1405 in.	27/8	in.	1.80	6.10
				1.80	6.10
29		218	in.		
30	.1285 in.	218	in.	1.80	6.10
31	.1200 in.	23/4	in.	1.75	5.90
32	.1160 in.	211	in.	1.75	5.90
33	.1130 in.	211	in.	1.75	5.90
34	.1110 in.	25/8	in.	1.75	5.90
35	.1100 in.	218	in.	1.75	5.90
	.1065 in.	210	in.	1.75	5.90
36		21/2		1.75	
37	.1040 in.		in.		5.90
38	.1015 in.	210	in.	1.75	5.90
39	.0995 in.	218	in.	1.75	5.90
40	.0980 in.	23/8	in.	1.75	5.90
41	.0960 in.	210	in.	1.70	5.70
42	.0935 in.	25	in.	1.70	5.70
43	.0890 in.	21/4	in.	1.70	5.70
44	.0860 in.	213	in.	1.70	5.70
		218	in.	1.70	5.70
45	.0820 in.				
46	.0810 in.	21/8	in.	1.65	
47	.0785 in.	210	in.	1.65	
48	.0760 in.	210	in.	1.65	
49	.0730 in.	2	in.	1.65	
50	.0700 in.	118	in.	1.65	
51	.0670 in.	118	in.	1.60	
52	.0635 in.	17/8	in.	1.60	
				1.60	0 000
53	.0595 in.	113	in.		
54	.0550 in.	118	in.	1.60	
55	.0520 in.	13/4	in.	1.60	
56	.0465 in.	111	in.	1.55	
57	.0430 in.	111	in.	1.55	
58	.0420 in.	15/8	in.	1.55	
59	.0410 in.	178	in.	1.55	
60	.0400 in.	116	in.	1.55	14 27
		11/2	in.	1.50	ST.
61	.0390 in.				
62	.0380 in.	11/2	in.	1.50	
63	.0370 in.	11/2	in.	1.50	
64	.0360 in.	11/2	in.	1.50	
65	.0350 in.	11/2	in.	1.50	
66	.0330 in.	11/2	in.	1.50	1
67	.0326 in.	170		.1.50	
68	.0310 in.	176	in.	1.50	
69	.02925 in.		in.	1.50	
70	.0280 in.	110	in.	1.50	D
Unless otherwise	specified,	we ship	Carbon	Steel	Bits.
No. 108A. Carbon S	Steel			60	6 P. C.
No. 418. High Spe	eed			45	I P. C.
		A ALCOHOLD SERVICE AND			

DRILL BITS.



		746	, 112. I	DIE STOCK			
	F	or Dri	illing in	Wood or	Iron.		
		Wght	. Price,			Wght.	Price,
	Lgth.,	Each	, per		Lgth.,	Each,	per
Diam.	In.	Oz.	Doz.	Diam.	In.	Oz.	Doz.
16	35	1	\$ 2.50	18	61/2	3	\$10.50
32	32	1	2.70	45	63/4	3	11.75
1/8	313	1	3.00	1/2	7	31/2	13.00
52	410	1	3.50	37	71/4	4	14.25
1 <sup>3</sup> c	417	1	4.00	fe	71/2	41/2	15.50
32	4 %	1	4.50	5/8	71/2	5	18.00
1/4	413	11/2	5.00	- 11	71/2	6	21.00
32	51/4	11/2	6.00	3/4	71/2	6 7	24.00
16	51/2	11/2	7.00	18	71/2	71/2	27.00
32	53/4	11/2	8.00	7/8	71/2	9	30.00
3/8	6	2	8.50	18	71/2	10	33.00
33	61/4	2	9.25	1	71/2	12	36.00
		_	or and			•	

Drill Bit Sets.



This set includes Straight Shank Bits 1/2 to 1/2-inch, inclusive, by 64ths. This set consists of Straight Shank Drills, steel wire gauge, from No. 1 to 60, included.

No. 80. Stand, with Drills.

No. 80. Stand only.

3.50 607 P. C.

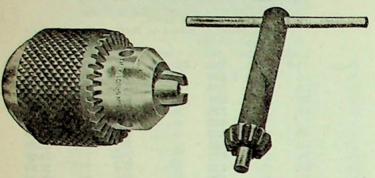


Mounted in Mahogany Cases.

No. 5. Short set straight shank Drills, 18 to 1/2 in. by
64ths. Price, per set\$15.00
No. 6. Short set straight shank Drills, 1/3 to 1/2-in. by
32nds. Price, per set 9.50
No. 8. Wire gauge Drills, Nos. 1 to 60. Price, per set. 13.35
606 P. C.

### DRILL CHUCKS

### (F) JACOBS IMPROVED.



No		Caj	pac	ity	Weigh	nt, Ea	ch	Each
1.	Regular	0	to	13-in		5	oz	4.50
2.	Regular	0	to	21-in		141/2	oz	5.50
		0						
4.	Regular	1e	to	3/4-in	4 lbs.	51/2	oz	15.00
				257 P. C.				

### Taper and Straight Arbors.

	No. 1	No. 2	No. 3	No. 4
	chuck	chuck	chuck	chuck
Nos. 1 and 2 Morse Taper	.\$0.80	\$0.80	\$1.20	\$1.40
No. 3 Morse Taper	. 1.20	1.20	1.20	1.40
No. 4 Morse Taper	. 2.00	2.00	2.00	2.00
1/2 and 5/8" Straight Shank		.70	.80	1.20
Arbors,	253 P.	C.		

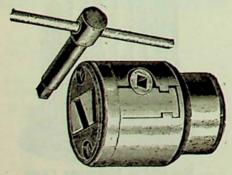
### (F) NEW JACOBS SUPER.

Design of body decreases weight. Ball bearings eliminate friction. Coarse pitch thread, rapid action, greater strength. Body deeply case hardened reduces wear.

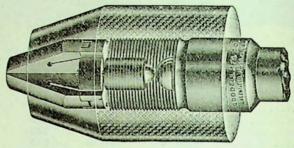
		Capacity,		Dia.,	Length,	List,
		inches.	Weight.	inches.	inches.	Each.
No. 8	Regular	. 0-1/4	7 oz.	13/8	23/8	\$ 7.50
	. Regular		16 oz.	17/s	27/8	9.00
	. Regular		2 lbs.	216	318	12.00

Extra for	Nos. 9 or 11 Chuck.	14 Chuck.
No. 1. Morse Taper	\$0.90	\$1.35
No. 2. Morse Taper		1.35
No. 3. Morse Taper	1.35	1.35
No. 4. Morse Taper		2.25
1/2-inch Straight Shank		.90
11-inch Straight Shank		.90
25	3 P. C.	

### NATIONAL ROUND BODY



### GREENFIELD.



This Chuck is a strong, accurate and well-made Drill Chuck, at a popular price.

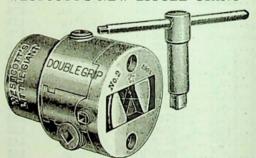
The shell is one piece, and the jaws are of tool steel, carefully hardened and tempered. It has ball-bearing thrust. This Chuck has such a strong grip that no spanner wrench is required to tighten, but one is furnished with the two larger sizes, as occasionally one is needed to loosen.

It is fitted with ½-inch or 41/64-inch Shank for Angular or Blacksmith Drills, or with Morse Taper Shank, as desired, but ½-inch Shank is sent, unless otherwise specified.

No. 1, capacity to ½-inch:

No. 1, capacity to 32-men.	
Straight Shanks, 1/2-in. or #4-in. Each	\$1.50
Morse Taper No. 1 or No. 2. Each	2.00
No. 2, capacity to 1/4-inch:	
	0.00
Straight Shanks, 1/2-in. or 11-in. Each	
Morse Taper No. 1 or No. 2. Each	2.50
No. 3, capacity to %-inch:	
Straight Shanks, 1/2-in. or 11-in. Each	3.00
Morse Taper No. 1 or No. 2. Each	3.50
Taper Hole. Each	
Taper Hole. Bach	4.00
No. 4, capacity to ½-inch:	
Straight Shanks, 1/2-in, or 11-in, Each	4 00
Morse Taper No. 1 or No. 2. Each	
Taper Hole, Each	. 5.00
roa P. C	
103 P. C.	

### WESTCOTT'S NEW LITTLE GIANT

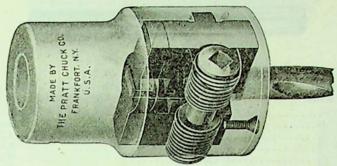


When ordering, specify what size shank is wanted.  No. 0. Diameter 2½-inch. Holding 0 to ½-inch: Price, each Extra Screws. Each	\$ 9.00 2.00
No. 1. Diameter 3-inch. Holding 0 to ¾-inch: Price, each Extra Screws. Each	10.00 2.00
No. 2. Diameter 3½-inch. Holding 0 to 1-inch: Price, each Extra Screws. Each	11.00 2.20
No. 3. Diameter 6-in. Holding 0 to 1½-inch: Price, each Extra Screws. Each	20.00 5.00
No. 4. Diameter 6½-inch. Holding 0 to 2-inch: Price, each Extra Screws. Each	25.00 6.00
Arbors, ½ to %-inch Shank. Each	1.00 2.50

(F) Goods marked (F) not carried in stock, shipment from factory.

### DRILL CHUCKS.

### PRATT'S IMPROVED.

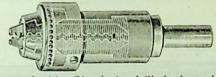


Screws weigh from 3 to 12 ounces.

Jaws weigh from 6 to 24 ounces.

No. 1. Diam., 2¼-in. Cap., 0 to ½-in. Wght., 2½ lb Price, each Extra Screws Extra Jaws. Extra Morse Taper Arbor.	
No. 2. Diam., 3-in. Cap., 0 to ¾-in. Wgt., 5½ lbs.: Price, each Extra Screws. Extra Jaws. Extra Morse Taper Arbor.	1.35
No. 3. Diam., 3%-in. Cap., 0 to 1-in. Wgt., 10 lbs.: Price, each	12.00 1.80 4.35 1.80
No. 4. Diam., 5¼-in. Cap., 0 to 1½-in. Wgt., 23½ lb. Price, each Extra Screws. Extra Jaws Extra Morse Taper Arbor.	
No. 5. Diam., 6%-in. Cap., 0 to 2-in. Wgt., 48 lbs.: Price, each	26.00 3.90 8.00 2.80

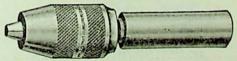
### SAMSON.



The sleeve of this Chuck is drilled through solid cast steel. The jaws open parallel, or at a slight angle, are interlocking and grip firmly, round, taper, or square shank drills, large expansion bits, or the smallest twist drill.

The ball-bearings in the Chuck enforce a very strong grip. Holds bits up to \%-inch. Weight, 1\% pounds.

With 1/2 or 5/4-inch shanks. Price, each......2257 \$3.00



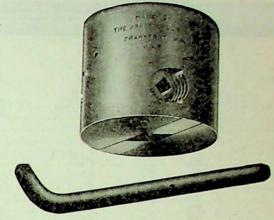
No. 7. ½-in., 3-jaw. Jaws machined and ground grip, accurately and securely protected springs; capacity 0 to ½-in. round shanks; outside dia., 1½-in.; dimensions of shank, 2½x1½-in.; weight, 17 ozs.

Price, each. 2254 \$2.80

No. 6. 3/4-in., 3-jaw.; capacity, 0 to 3/4-in. round shanks; outside dia., 1/4-in.; otherwise same as No. 7; weight,

Above chucks furnished with No. 1, 2, 3 or 4 Morse Taper shank at extra charge.

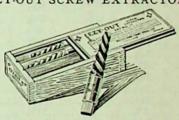
### PRATT'S.



Arbors are made with shanks ½, % and 11 inches in diameter, and 2¼ inches long. Unless otherwise specified, ½-inch Arbors will be furnished. Weight, 5 pounds.

No. 14. Capa	city, 0 to %-inch.	Each8507	\$7.00
Extra Arbors.	Wgt. 7 ounces.	Each 851	1.00
Extra Screws.	Wgt. 2 ounces.	Each2003	1.30
Extra Jaws.	Wgt. 4 ounces.	Per Set4254	2.90

### EZY-OUT SCREW EXTRACTORS.



The only tool expressly designed for the removal of all kinds of Broken Screws, Studs, Stay Bolts, Cap Screws, etc. Drill a hole in the broken screw, and insert extractor giving it a slight twist to seat it firmly.

No. 15. Set designed particularly for tool room use comprising Extractors Nos. 1, 2, 3, 4, 5.

No. 15. Per	set\$3.0	0
No. 15-A	Garage Set containing Extractors Nos 1 9 5	2

4, 5 and 6.

No. 15-A. Per set \$4.00

No. 16. Set of particular interest to railroads, steel and structural workers, etc., known as the Heavy Shop Set, includes Extractors Nos. 6, 7, 8, 9.

No. 17. Utility set for all-around use by machine shops, auto repair shops, service stations, etc., includes Extractors Nos. 4, 5, 6.

No. 192 Fav.Out Scrow Extractor

	2. Ezy-Out				n.t.
Size,		Dia. at		Length	Price
No.	Small End.	Large End.	Flute.	Over All.	Each
1	15	1/8	1/2	2	\$0.55
2	32	r <sup>2</sup> c	3/4	23%	.60
3	1/8	1/4	1	211	.65
4	1ª	33	11/4	3	.75
5	1/4	176	11/2	3%	.85
6	3/8	32	13/4	334	1.00
7	1/2	3/4	2	41/8	1.35
8	3/4	124	21/8	43/8	1.85
9	1	132	21/4	4%	2.65
		253 P	. C.		

# HAND REAMERS.



# No. 128-A.

Diameter, Inches	Length Flute, Inches	Length, Over All	Price, Each
* * * * * * * * * * * * * * * * * * *		0.00	
	1½	3	\$1.00
	1%		
	13/4		
	17/8		
1/4			1.40
	21/8		
	21/4		
	23/8		
	21/2		1.60
33	25/8	51/4	
	23/4		
35	2½	53/4	
1/2	3	6	1.90
33	31/8	61/4	
26	31/4	61/2	2.00
18	33/8	63/4	2.10
	3½		2.20
	313		2.30
	3%		2.40
	41		
	41/2		
	423		2.70
	417		
**********	411		
	484		
	584		
	51/8		
	578		
132	517		3.85
116	5%		
132	552	1115	
	518		
1 fe	6		4.60
11/4	61/8	121/4	4.90
	203 F	. C.	

# AUTOMOBILE TAPER-PIN REAMERS.



Set for Automobile Kits.

In handsome leather case.

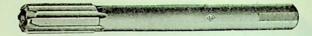
These Reamers are very useful for quick repair work and break-downs on the road. Jammed and worn pin-holes can be reamed smooth, or to take next size larger pin.

In handsome and substantial leather case; size, closed, 5x2 inches. Weight, 4 ounces.

Set No. 1423. Six sizes, Spiral Fluted Taper-Pin Reamers, Nos. 0, 1, 2, 3, 4 and 5:

Price, complete, in genuine leather case, each.....\$11.25
304 P. C.

ROSE CHUCKING REAMERS.



No. 136.

Diameter,	Length Flute, Inches	Length,	Price,
Inches	Inches	Over All	Each
1/	1½	6	\$1.20
74	11/	6	1.30
	1½		4.00
	1½		4 40
32	1½		
	13/4		1.00
	13/4		4.00
	1¾		4 00
	13/4	0	4.00
1/2			
32	2		2.00
16	2		0.05
32	2		
%	21/4		
	21/4		
11	21/4		
33	21/4	9	2.55
3/4	21/2	91/2	
	21/2		
13	21/2	91/2	2.80
	21/2		3.00
	25%		3.00
	25/8		3.25
	25/8		
	25/8		3.45
0.0	23/4		
	23/4		3.70
	23/4		
1.3	23/4	10½	
11/8	27/8		3.90
1 5	27/8		4.15
	27/8		
	2½		
11/4		11½	
15			
1%	31/4	12	4.80
	31/4		5.05
1½	31/2	12½	5.25

256 P. C.

### TAPER PIN REAMERS.



Taper 1/4-inch per foot.

These Reamers have the same taper, and each will overlay in convenient measure the size next smaller. The diameter is taken at extreme end.

No.	Small		Length Over All, Inches	
			23/8	
1	146	13/4	21/2	1.00
2	162	2	3	1.25
			4	
5	240	3	41/2	2.00
8	398	51/4	63/4	3.00
9	482	61/8	8	3.50
10		7	9	4.50

307 P. C.

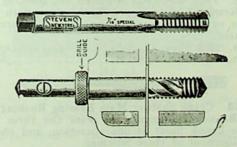
# FLUTED CHUCKING REAMERS.



No. 134-A. With Taper Shanks.

	Length	Length	Standard	
Diameter,	Over All,	Flute,	Taper	Price,
Inches	Inches	Inches	Shank	Each
1/4	6	11/2	1	
32		11/2		
re	6		1	
32				
3/8				1.75
33				1.90
18				
35				
1/2		2		
32 · · · · · · · · · · · · · · · · · · ·		2		
38		2		
5/8		21/4		
31		21/4		
14	Contract of the Contract of th			
33		21/4		
3/4		21/2		
35		21/2		3.35
18	91/2		A STATE OF THE PARTY OF THE PAR	
37	91/2	21/2:		
7/8	10	2 1/8	2	3.60
32	10		2	3.90
18				3.90
32		25/8	3	4.15
- •	10½	23/4		4.15
132		23/4		
116		23/4		
	10½	23/4		
	11			
1 32		27/8		
	11			
	$11\frac{1}{2}$ $11\frac{1}{2}$			
175		31/4	4	
	121/2	21/	4	
1-2	12½	31/2	4	
15/8	13	372	4	
111	13	3¾	4	7.20
	shed in Straigh	t Shank wh	nen wanted.	1.20
22.0		53 P. C.	Tuneca.	
	1,	33 1. C.		

# CYLINDER TAP AND DRILL SETS.



No. 100. For Ford Cars.

For removing broken cylinder head and water connection bolts in Ford cylinders.

A special drill bushing is furnished to guide the drill through the center of the broken bolt, so that only a small section of the threads remain. The special tap is then used to clean out the hole, leaving it free and ready for a new bolt.

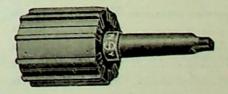
# FLUTED SHELL REAMERS.



No. 130-A. Eccentric Flutes.

Diameter,	Hole,	Length Over All,	Fitting Arbor	Price.
Inches	Inches	Inches	No.	Each
3/4	3/8	21/4	4	\$ 2.10
18	1/2	21/2	5	2.20
7/8	1/2	21/2	5	2.30
18		21/2		
1			5	2.50
1 10				
11/8	%	23/4	6	2.90
13		23/4		
11/4	5/8	23/4		
1 %	3/4	3	7	3.55
13/8			7	3.80
170	3/4	3	7	4.05
11/2	3/4	3	7	
1 %	3/4	3	7	4.55
15/8			7	4.80
117				
13/4	1			
118		3½	8	5.70
17/8	1	31/2		
118	1	31/2		
2		31/2		
21	11/4			6.95
		33/4		
		33/4		
21/4		334		
25		3¾		8.35
23/8		3¾		10000
217		3¾		
21/2		3¾		9.40
210				9.80
	11/2		10	10.20
211			10	
23/4			10	
218			10	
27/8	The second second		10	
218			10	
	11/2		10	
ALC: U		103 P. C.		
		103 P. C.		

# CYLINDER REBORING REAMERS.



No. 3000. For Ford Cars.

Designed for fitting 1/2-inch oversize Ford piston.

Fitted with No. 4 Morse Taper Shank. Can be used in any ordinary drill press.

TILE, Cacification of the second of the seco	Price.	each		\$25.00
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List Net.

# EXPANSION REAMERS.

# No. 129.

Reamers for brass and bronze require special clearance and are so furnished on request.

These Reamers always furnished with Pilot Point.

We do not guarantee these Reamers to stand more than .010 inch expansion from size stamped on shanks.

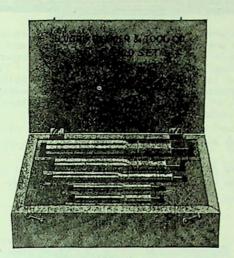
	Length	Length	Price,
Diameter	of Flute	Over All	Each
1/4-inch		3¾ in.	\$ 3.00
32-inch		3% in.	3.05
re-inch	212 in.	4 in.	3.10
3½-inch	25 in.	41/s in.	3.15
%-inch	21/2 in.	41/4 in.	3.20
13-inch	. 217 in.	43/s in.	3.25
re-inch	233 in.	4½ in.	3.30
18-inch	233 in.	4¾ in.	3.35
½-inch	233 in.	5 in.	3.40
12-inch	25/s in.	51 in.	3.50
re-inch	2¾ in.	5% in.	3.65
18-inch	21/s in.	518 in.	3.80
%-inch	31/s in.	5¾ in.	4.00
§½-inch	3 % in.	6 in.	4.20
li-inch	3½ in.	6¼ in.	4.40
§§-inch	3% in.	61 in.	4.60
3/4-inch	3% in.	6% in.	4.80
§§-inch	318 in.	6% in.	5.00
18-inch	4 in.	71/s in.	5.25
34-inch	4 % in.	73/s in.	5.50
%-inch	4 % in.	7% in.	5.75
§§-inch	41% in.	718 in.	6.00
₹8-inch	418 in.	81 in.	6.25
§½-inch	4% in.	832 in.	6.50
1 -inch	4% in.	8½ in.	6.75
1 2-inch	5 in.	8¾ in.	7.00
176-inch	51/s in.	9 in.	7.25
132-inch	5 % in.	91/s in.	7.50
11/8-inch	51/4 in.	91/4 in.	7.75
152-inch	5% in.	933 in.	8.00
1 %-inch	5% in.	9 % in.	8.30
132-inch	57 in.	933 in.	8.60
11/4-inch	5½ in.	9% in.	8.90
1-2-inch		10 in.	9.20
1 %-inch		101/s in.	9.50
1½-inch		10¼ in.	10.00
1%-inch		103/s in.	10.50
1½2-inch		10½ in.	11.00
1 %-inch		105/s in.	11.50
1½2-inch		10 lè in.	12.00
1½-inch	100	10¾ in.	12.50
	54 P. C.		
	.,		

# REAMERS FOR FORD PARTS.



Price, e	
No. Type sion	Type
2517. Differential Case Bushing\$ 5.00 2525B. Differential Pinion Bushing 2.25	\$13.00 4.00
2527. Differential Spider Bushing 3.75 2540. D. S. Housing Front Bushing 3.75	7.25 6.75
2559. Hub Cam Shaft Bushing 1.90	3.40
3042-3044-3545. Reamer. This reamer takes care of the three bushings below,	
as they are the same size 2.75 3042. Cam Shaft Front Bearing.	4.80
3044. Cam Shaft Rear Bearing. 3545. Steering Post Bracket Bushing.	
3058B. Push Rod Bearing Reamer, with	
pilot	
3052B. Valve Stem Bushing—Solid Type 2.00 3059½. Push Rod	
<b>3304.</b> Reverse Gear Bushing	19.50 14.00
3311-3320B. Reamer. This reamer takes	
as they are the same size 5.50	6.75
3311. Brake Drum Assembly Bushing. 3320B. Driven Gear Sleeve Bushing.	
3320C-3327B. Reamer. This reamer takes care of the two bushings below,	
as they are the same size 5.50	6.25
3327B. Driving Plate Bushing.	2 20
3521. Steering Gear Pinion Bushing 1.75 3820-3844. Reamer. This reamer takes care	3.30
of two bushing below 2.25 3820. Front Spring Perch Bushing.	3.65
3844. Rear Spring Perch Bushing. Solid Type, 308 P. C. Expansion Type, 203 P. C.	2.
No 2713-2714 Ford Spindle and Spindle Arm B	ushing
No. 2713-2714. Ford Spindle and Spindle Arm B Reamer. This Reamer is made to ream these bu	shings
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short process.	shings ng sec- portion
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.	ishings ig sec- portion is fur-
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short prise is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	ishings ig sec- portion is fur-
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.	shings ag sec- portion is fur- \$2.25
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Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short process is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings ag sectoration is fur- \$2.25 2.25 eamer.
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings ag sectoration is fur- \$2.25 2.25 eamer.
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each. 1001 Spiral Flute. Price, each. 1106  No. 3022½. Ford Wrist Pin or Piston Pin Bushing R. This Reamer is made especially to ream both but for the wrist pin at one operation, and insures palignment.  Price, each, Solid Type 1503	shings ag sectoration is fur- \$2.25 2.25 eamer.
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings ag sectortion is fur- \$2.25 2.25 eamer. shings perfect \$2.25
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings sectoration is fur- \$2.25 2.25 eamer. shings perfect \$2.25 4.80
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each. 1001 Spiral Flute. Price, each 1106  No. 3022½. Ford Wrist Pin or Piston Pin Bushing R This Reamer is made especially to ream both but for the wrist pin at one operation, and insures palignment.  Price, each, Solid Type 1503 Price, each, Expansion Type 3881  No. 3031-2-3. Crank Shaft or Main Bearing Bushing R This Reamer is designed to ream the three but	shings ag sectortion is fur- \$2.25
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short processes is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings sectoration is fur- \$2.25 2.25 eamer. shings perfect \$2.25 4.80 eamer. shings
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings sectoration is fur- \$2.25 2.25 eamer. shings perfect \$2.25 4.80 eamer. shings perfect
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Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The lord tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	eamer. shings eamer. shings eamer. shings erfect \$2.25 4.80  eamer. shings erfect \$2.25 4.80
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The long tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings sectoration is fur- \$2.25 2.25 eamer. shings perfect \$2.25 4.80 eamer. shings perfect \$2.25 4.80 eamer. shings n per- \$20.00 \$5.00 n 8.90 ch, 2.50
Reamer. This Reamer is made to ream these but in perfect alignment at one operation. The lord tion is for the spindle body bushing, and the short price is for the spindle arm bushing. This Reamer nished in straight or spiral flute.  Straight Flute. Price, each	shings sectoration is fur- \$2.25 2.25 eamer. shings perfect \$2.25 4.80 eamer. shings perfect \$2.25 4.80 eamer. shings perfect \$2.25 4.80

### FORD REAMER SETS.



No. 12.

Set consists of five reamers, selected as the ones most frequently used in the repair of Ford automobile transmissions.

No. 33141/2. Transmission Gear Bushing.

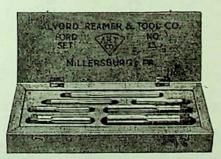
No. 3320C-3327B. Driving Gear and Driving Plate Bushing.

No. 3304. Reverse Gear Bushing.

No. 3309. Slow Speed Gear Bushings.

No. 3311-3320B. Brake Drum Assembly and Driven Gear Bushings.

No. 3311-3320B. Brake Drum Assembly and Driven Gear Bushings.



Set consists of seven reamers used in making general repairs to Ford automobiles.

No. 2813-14. Spindle and Spindle Arm Bushing.

No. 2540. D. S. Front Housing Bushing.

No. 3820-3844. Front and Rear Spring Perch Bushings.

No. 3042-3044-3545. Cam Shaft Bearings and Steering Post Bracket Bushings.

No. 2559. Hub Cam Shaft Bushing.

No. 30591/2. Push Rod Bushing.

No. 30221/2. Wrist Pin or Piston Pin Bushing.

#### CRITCHLEY REAMER SETS.



Reamers put up in strong, handsome hardwood cases in three sizes:

No. 7 contains seven reamers from No. 00 to No.	
11/2 in five blade typeList \$	\$33.00
And No. 20 to No. 26 in six blade typeList	33.00
No. 10 contains ten reamers from No. 00 to No. 4	
in five blade typeList	50.90
And No. 20 to No. 29 in six blade typeList	
No. 14 contains fourteen reamers from No. 00 to No.	
8 in five blade typeList	88.80
And No. 20 to No. 33 in six blade typeList	

# FORD UTILITY SET Genuine Critchley Reamers

# FORD REPAIRERS-Use Following Sizes

	The state of the s
No. Expands	Use on Ford Parts Price
00—5Bld. 11 to 11 in. 20—6Bld. 18 to ½ in.	No. 2559 Hub cam shaft
00½—5Bld. % to % in. 22—6Bld. % to % in.	No. 2714 Spindle arm bushing 4.50 No. 3820 Front spring perch. bush. No. 3844 Rear spring perch. bush.
0-5Bld. % to 11 in. 23-6Bld. % to 11 in.	No. 2528 B. diff. pinion bush 4.75
0½—5Bld. 11 to ¾ in. 24—6Bld. 11 to ¾ in.	No. 302214 Piston pin bushing 4.75 No. 304234 Cam shaft bushing No. 3545 Steering post brk. bush. No. 331414 Triple gear flgd. bush.
3-5Bld. 11 to 11/2 in. 27-6Bld. 7/2 to 1 in.	No. 2527 Diff. spider bushing 5.50 No. 2540 D. S. housing front bush. No. 3311 Brake drum assembly No. 3320 B. C. driven gear assembly No. 3327 B. driving plate bushing
4-5Bld, 11/4 to 13/2 in. 29-6Bld, 11/4 to 11/4 in.	No. 3024 Connecting rod
6-5Bld. 118 to 118 in. 31-6Bld. 118 to 15 in.	No. 2517 Diff. case bushing
9-5Bld. 2¼ to 2½ in. 34-6Bld. 2½ to 2½ in.	No. 3304 Reverse gear bushing18.00
57-6Bld. 31 to 31 in.	No. 30221/2 Piston pin bushing 8.00
	Total\$67.00

FOR USE ON TRANSMISSION. (Same Numbers) 0½-5Bld. 11 to ¾ in. { No. 3314½ Triple gear figd. bushing 24-6Bld. 11 to ¾ in. } No. 3320 B. C. drive gear sleeve bush. No. 3327 B. driving plate bush. No. 3311 Brake drum assembly No. 2540 D. S. housing front bushing. 3-5Bld. 11 to 11% in. 27-6Bld. 76 to 1 in.  $6-5{\rm Bld},\,1\frac{14}{15}$  to  $1\frac{14}{15}$  in. { No. 3309 Slow speed rear bushing 31-6Bld,  $1\frac{1}{15}$  to  $1\frac{1}{25}$  in. { 9—5Bld. 2½ to 2½ in.  $\{$  No. 3304 Reverse gear bushing 34—6Bld.  $2\frac{1}{12}$  to  $2\frac{1}{12}$  in.  $\}$ 101 and 108 P. C.

# CRITCHLEY REAMERS.



# How to Measure the Five Blade Critchley Reamer.

All one has to do is to get the size of the body and then caliper over body and one blade, and add half the difference between the size of the body and the hole to be reamed.

		Gent	iine	Critch	nley	Five	e-Bla	ade	R	ear	ner	s.				
		Exp	ansi	on.								I	Pr	ic	e, (	each
No.	00.	15"	to	33"											.\$	4.50
No.	001/4.	17"	to	16												4.50
No.	001/2.	16	to	3/8"												4.50
No.	0.	5/8"	to	11."												4.75
No.	01/2.	11"	to	3/4"												4.75
No.	1.	3/4"	to	13"												5.00
No.	11/2.	18"	to	7/8"												5.00
No.	2.	7/8"	to	31"												5.50
No.	3.	31"	to	11/8"												5.80
No.	4.	11/8"	to	132"												6.60
No.	5.	139"	to	145"												7.50
No.	6.	135"	to	111"												9.00
				103	and	105	P.	C.								

# REPAIR PARTS-ORIGINAL FIVE.

		Nuts.			
No	00 to 3	4	5	6	7
Each	30	.35	.40	.45	.56
No	8	9	10	11	12
Each	60	.80	1.10	1.20	1.40
		Blades.			
No00 to	1	2 to 3	4	5	6
Each :30	0	.36	.40	.44	.50
No	7 8	9	10	11	12
Each66	0 .70	.95	1.10	1.20	1.40
		List Net.			

# GENUINE CRITCHLEY SIX.

		Si	x-Blade	Exp	anding	Reamer.	
No. 19.	27"	to					\$ 4.50
No. 20.	16"	to					4.50
No. 21.	1/2"	to	76 ···				 4.50
No. 22.	16"	to	5/8"				 4.50
No. 23.	5/8"	to	11"				 4.75
No. 24.	31."	to	3/4"				 4.75
No. 25.	3/4"	to	13"				 5.00
No. 26.	10"	to					5.00
No. 27.	7/8"	to	- **				5.50
No. 28.	1"	to					 5.80
No. 29.	11/8"	to	- 2 40				 7.00
No. 30.	11/4"	to	"				8.00
No. 31.	174	to	* 10				10.00
No. 32.	15%"	to					 11.50
No. 32.	17/8"						
		to					15.00
No. 34.	218"	to					 18.00
No. 35.	210"	to					22.00
No. 36.	3"	to					26.00
No. 37.	31/2"	to	416				 30.00
			103	and	1 108 P.	C.	

# REPAIR PARTS-GENUINE CRITCHLEY SIX.

	1	Nuts.			
No 19 to 24			27 to 28	29 to 30	31
Each30	.3	5	.40	.45	.50
No 32	33	34	-35	36	37
Each60	.65	.75	1.00	1.20	1.35
	E	Blades.			
No 19 to 24	25 to		27 to 28	29 to 30	31
Each30	.3.	5	.40	.45	.55
No 32	33	34	35 1.00	36	37
Each65	.70	.80	1.00	1.20	1.35

# CRITCHLEY PISTON PIN REAMERS.



An adjustable six-blade aligning reamer with adjustable pilot to be used on Piston Bushings that require reboring. It is made in the required lengths and diameters with a practical range capacity for each size reamer. The blades operate as in Critchley Reamers. The guide adjustment is extremely simple and mechanically perfect. Each reamer has an expansion of  $\frac{1}{16}$ . All repair men will recognize the value of this tool.

Nos. 55 and 56 are motor bicycle and twin sizes.

No. 57 for Ford, Buick, Hupmobile, Overland 20, and others.

No. 58 for Dodge motors and White motors.

No. 62 for most Continental and White motors.

No. 64 for Fordson tractors, and others.

	A Hele D	iameter	Holo	Length	C	Price
	Min.	Max.	Min.	Max.	Max.	Each
No. 55	32	33	2	31/4	11/2	\$ 8.00
No. 56	32	33	2	31/2	15/8	8.00
*No. 57	33	35	2	4	270	8.00
No. 58	35	37	2	41/2	216	9.00
No. 59		38	2	41/2	215	9.50
No. 60		31	2	41/2	216	10.00
No. 61	31	132	2	41/2	210	. 11.00
No. 62	132	132	2	$4^{1/2}$	216	12.00
No. 63		132	2	41/2	216	13.50
No. 64		132	2	41/2	218	15.00

\*No. 57 fits piston pin bushings for Ford cars.

103 P. C.

, mil	Extra Nuts Price Each	Extra Pilot Blades Price Each	Extra Reamer Blades Price Each
No. 55	30	.30	.50
No. 56	30	.30	.50
No. 57	35	.35	.50
No. 58	35	.35	.60
No. 59	40	.40	.60
No. 60	40	.40	.60
No. 61	45	.45	.60
No. 62	45	.45	.75
No. 63	50	.50	.75
No. 64	50	.50	.75
	List Ne	t.	

# CRITCHLEY AUTOMOBILE CYLINDER REAMERS.



No Hogging No Chatter.

Two boys on the ends of a 36-inch Tap wrench can ream a block in half an hour.

Always use in a vertical position; never use it in a lathe.

Use as you do any Reamer or in an upright Drill Press, using a Universal Joint between Reamer and Drill Spindle.

Always set the diameter so that the first cut will get under the glazed surface of the cylinder wall with first chip. Then set it to ream 2/1000 or 3/1000 for finished chip, and keep reaming all the time in the same direction. Made in three sizes. Ford, Chevrolet and Dodge Sizes.

List Net.

# BIT STOCK REAMERS IN SETS.



Assortment No. 705.							
re, ½. In case.							\$4.00
Assortment No. 709.	Set	of	nine	Reamers.	1/4.	fe.	3/8.
70, 1/2, fo, 1/8, tt,	3/4.	In	case				8.25
	2	253	P. C				

# BIT BRACE TAPER REAMERS.



Spiral Flute.

These Reamers are intended for reaming out and making true, smooth holes in wood or iron.

Each Reamer at the largest cutting diameter is approximately is inch larger than the size stamped on shank. Each Reamer tapers one-eighth of an inch, and follows from the smallest to the largest.

	Lgth. Over All,	Lgth. Flute.	Weight,	Price,
Size.	Inches.	Inches.	Ounces.	Each.
1/8	35/8	15/8	1	\$0.60
1/8 1 <sup>3</sup> c 1/4 1 <sup>5</sup> c 3/8 1 <sup>7</sup> c 1/2 1 <sup>6</sup> c	33/4	13/4	1	.60
1/4	418	11/8	1	.60
75,	476	232	11/2	.60
3/2	476	216	13/4	.65
70	418	23/8	21/4	.70
1/2	515	21/2	3	.75
2	518	23/4	4	.80
5/8	518	23/4	41/2	.95
18 11	676	27/8	7	1.10
16	016		71/2	1.25
3/4 18	61g	27/8		
18	611	31/8	9	1.50
7/8 15	618	31/8	10	1.75
18	7	3%	12	2.00
1	7	3%	15	2.25
11/8	71/4	35/8	17	2.85
11/4	71/2	37/s	20	3.55
		256 P C		

# BURRING REAMERS.



	Total Length 3 Inches.
	Length of Flute 1 Inch.
	Size at Point
	Size at Large End 3/4 Inch.
	Style of Shank Bit Brace.
	Capacity of Pipe 1/8 to 1/2 Inch.
No. 241.	Price, each\$1.00
,	Total Length 318 Inches.
	Length of Flute 1 nd Inches.
	Size at Point
	Size at Large End 1 2 Inches.
	Style of Shank Bit Brace.
	Capacity of Pipe¼ to 1 Inch.
No. 242.	Price, each\$1.25

203 P. C.

### STOVE BOLT TAPS.



These Taps are made to correspond in sizes and threads to the American Screw Company's stove bolts. Other sizes and threads will be charged as special. Less than six Taps of a size will be charged at rate of single Taps.

Size,	No. Threads	Weight,	Price,	Price,
In.	to Inch.	Each.	Each.	Doz.
16	24	1	\$0.40	\$4.80
1/4		1	.45	5.40
15	18	2	.50	6.00
3/8	16	3	.55	6.60

Furnished with left-hand threads at extra price.

18 and smaller, 456 P. C. Larger, 401 P. C.

# PIPE TAPS AND REAMERS.



Pipe Taps.



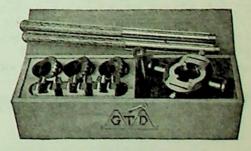
Pipe Reamers.

Taps and Reamers same price.

	to Inch.	Weight.	Price.
			Frice,
Size.	Brigg's Std.	Each, Ozs.	Each
1/8	27	2	\$1.00
1/4	18	2	1.20
3/8	18	. 3	1.60
1/2		5	2.00
3/4		8	2.80
1		14	4.40
11/4	11½	24	5.00
11/2	11½	34	6.60
2	11½	57	10.00

Furnished with left-hand threads at extra price. Taps,  $\frac{1}{8}$  to 1 inch, 553 P. C. 1½ to 2 inches, 409 P. C. Reamers,  $\frac{1}{8}$  to 1 inch, 406 P. C. 1½ to 2 inches, 303 P. C.

# LITTLE GIANT PIPE STOCKS AND DIES.



Style C.

Regularly furnished with one Stock, Pipe Dies and Bushings for each size in plain boxes.

Cutting Sizes.	Length of Stock.	Weight, Pounds.	Price.
1/8", 1/4", 3/8", 1/9"	22"	6	\$ 9.00
	36"	12	12.00
	36"	10	9.00
1/2", 34", 1", 11/4"	41"	12	14.00
	Sizes. ½", ¼", ¾s", ½" ¼", ¾s", ½", ¾", 1" ½", ¾", 1"	Sizes. of Stock. 1/8", 1/4", 3/8", 1/2" 22" 14", 3/8", 1/2", 3/4", 1" 36" 1/2", 3/4", 1" 36"	Sizes. of Stock. Pounds.  1/8", 1/4", 3/8", 1/2" 22" 6  1/4", 3/8", 1/2", 3/4", 1" 36" 12  1/2", 3/4", 1" 36" 10

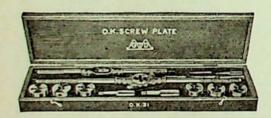
### LITTLE GIANT AUTOMOBILE SCREW PLATES.



S. A. E. Standard.

Assortment No. 31. Has Stock 14½ inches long, Adjustable Tap Wrench No. 5. Plug Taps, Dies, Collets. Cutting 14, 5, 16, 3, 3, 4, 17, 5, 1/2, 20. Price, each ......\$18.50 3/4 16 Price, each ..... Price, each ......\$44.25

# O-K AUTOMOBILE SCREW PLATES.



No. 35.

One Adjustable Guide Stock (No. O. K. 10), 26 inches long, with Cam Locking Device.

Seven sizes O. K. Patent Dies, and Hercules Taper Taps

1428, 1524, 3824, 1620, 1/220, 5818, 3410. All S. A. E. Standard threads.

One Adjustable Tap Wrench (No. 6), 15 inches long, with Independent Screw for tightening the jaw.

All complete in handsome varnished case with metal

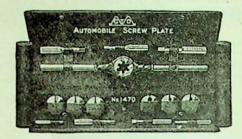
Shipping weight, 12 pounds. No. 35. Price, each ......\$23.50

# O-K COMBINATION SCREW PLATES.

Including: O. K. 5 Adjustable Guide Stock, 23 inches taps to match.

No. 315. Price, complete in case.....\$42.50

#### AUTOMOBILE SCREW PLATES.



For the Repair Kit and Garage.

For convenience of the automobile man, we are furnishing a set of Stocks and Dies, threading 1/4 to 5/8-inch, S. A. E. Standard Bolts and Nuts, put up in a small, compact, and handsome leather roll. It takes little space, and is an invaluable addition to every repair kit; also a great convenience for garages, to be taken when out on repair trips.

Roll:

Price, each .....

Set No. 1471. Same as above, except with Adjustable Tap Wrench No. 6: Price, each .....\$23.00

### GARAGE REPAIR SCREW PLATES.



No. 2501.

For Ford Cars, which is an assortment of taps, dies and reamers, to meet the demand from garages and repair shops. Sizes:  $\frac{1}{4}^{28}$ ,  $\frac{1}{16}^{28}$ ,  $\frac{3}{16}^{28}$ ,  $\frac{3}{8}^{24}$ ,  $\frac{1}{32}^{16}$ ,  $\frac{7}{16}^{20}$ ,  $\frac{7}{16}^{14}$ ,  $\frac{1}{2}^{20}$ , plug taps and round adjustable dies, special spiral fluted reamers for spindle body, spindle arm bushing and piston ring bushing. No. 2501. Garage Set. Price......\$17.00

# EASY S. A. E. SCREW PLATES.



No. 5B.

Has two Stocks, one 151/2 inches long for the first four sizes; one 23 inches ong or the larger sizes. Cutting  $^{1}\!4$ ,  $^{1}\!6$ ,  $^{3}\!8$ ,  $^{7}\!6$ ,  $^{1}\!2$ ,  $^{5}\!8$ ,  $^{3}\!4$ .

258 P. C. \$21.00 No. 5B. Price, each .....

SCREW PLATES.

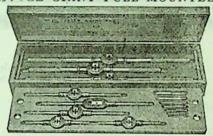
#### LITTLE GIANT SINGLE STOCKED.



Assortment No. 5. Stock, 23 inches long. Adjustable Tap Wrench No. 6. Taper Taps, Dies; Collets 2<sup>3</sup>/<sub>4</sub> inches in diameter. Cutting ½<sup>20</sup>, ½<sup>15</sup>/<sub>5</sub>, ½<sup>18</sup>, ¾<sup>16</sup>, ½<sup>12</sup>, ½<sup>12</sup>, ½<sup>12</sup>, ½<sup>18</sup>, ¾<sup>10</sup>. Price \$27.50

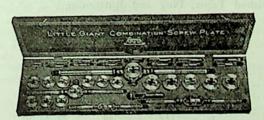
Assortment No. 5½. Stock, 23 inches long. Adjustable Tap Wrench No. 6. Taper Taps, Dies; Collets 2<sup>3</sup>/<sub>4</sub> inches in diameter. Cutting ½<sup>20</sup>, ½<sup>16</sup>/<sub>5</sub>, ½<sup>16</sup>/<sub>5</sub>, ½<sup>16</sup>/<sub>5</sub>, ½<sup>16</sup>/<sub>5</sub>, ½<sup>16</sup>/<sub>5</sub>, ½<sup>18</sup>/<sub>5</sub>, ½<sup>10</sup>/<sub>5</sub>, ½<sup>10</sup>/<sub>5</sub> Left-hand threads are special price.

# LITTLE GIANT FULL MOUNTED.



Assortment No. 65. Has Stock for each size Die. Adjustable Tap Wrench No. 6. Dies and Taper Taps. Cutting 1/423, 15.18, 3/816, 17.14, 1/212, 5/811, 3/416. Left-hand dies are special price. For repair parts, see Index.

# LITTLE GIANT COMBINATION.



No. 310. 5 sizes U. S. Standard 1/4 20, 18 18, 3/8 16, 76 14, 1/2 13, and S. A. E. Standard 1/4 28, 15 24, 17 20, 17 20. Stock 14 1/2 inches long. Adjustable Tap Wrench No. 5, 11 1/2 inches long. Weight, 14 pounds. Price, each. \$29.25

No. 311. 8 sizes U. S. Standard 1/4 20, 1/5 18, 3/5 10, 176 11, 1/2 13, 1/5 18, 5/5 11, 3/4 10, and S. A. E. Standard 1/4 20, 1/5 18, 1/5 20, 1/5 20, 1/5 18, 5/5 18, 3/4 10, 2 Stocks 14 1/2 inches long and 23 inches long. 2 Adjustable Tap Wrenches No. 5, 11 1/5 inches long and No. 6, 15 inches long. Weight, 31 payeds. Price each 252 P. C.

# O. K.



No. 5.

One Adjustable Guide Stock (No. O. K. 5), 23 inches long. Seven sizes O. K. Patent Dies and Hercules Taper Taps

1420, 1518, 3816, 7614, 1/213, 5811, 3410. All U. S. Standard Threads.

One Adjustable Tap Wrench (No. 6), 15 inches long, with Independent Screw for tightening the jaw, complete, in case with metal lining. Shipping weight, 12 pounds. No. 5. Price, each.....\$23.50 258 P. C.

#### CHAMPION EASY.



No. 51/2-B. Plate Complete in Box. Has two stocks, one 

Unless otherwise ordered, will send Screw Plates exact size U. S. standard. Can supply Screw Plates with 1/32 over-size V-thread at regular prices, when ordered.

254 P. C.

# CHAMPION EASY SCREW PLATE DIES.

Give number of screw plate or diameter of die wanted. Size, in. 18 Each....\$1.00 1.00 1.00 1.15 1.30 1.50 1.75 1.90 2.10 Each....\$2.35 2.60 3.00 3.40 3.75 4.40 5.00 5.75 7.00 List, Plus 207 P. C.

# G. T. D. ADJUSTABLE TAP WRENCHES.



# For Machinists' Taps.

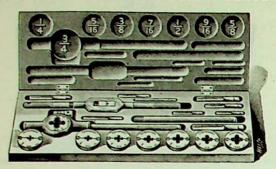
They are made from drop forgings.

Size No. 5. Length 11 inches; for taps it to 1/2-inch; Price, each......\$3.50

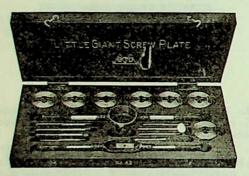
Size No. 6. Length 15 inches; for hand taps 1/4 to 3/4-inch, pipe taps 1/8 to 3/8-inch; Price, each.....\$4.00

Size No. 7. Length 19 inches; for hand taps % to 1-inch, pipe taps % to %-inch: .....\$5.00

Price, cach..... . 51 P. C. CHAMPION ORDNANCE SCREW PLATES.



LITTLE GIANT SCREW PLATES.



Assortment No. A-1.

Stock 7½ inches long. Adjustable Tap Wrench No. 0, 7″ long.

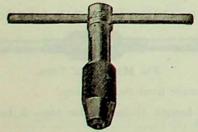
Plug Taps, Dies, Collets, 1¼-inch diameter.

Cutting ½-40, ½-36, ¼-24, ½-24, ¼-20.

Price each \$\frac{1}{2}\$.\$\$\$\$11.50

# ASSORTMENT NO. AA4.

G. T. D. ADJUSTABLE T TAP WRENCHES.



Made of finest steel carefully hardened and tempered.

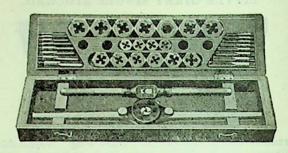
No. 329. Will take machine screw taps Nos. 0 to 18, straight shank taps 16-inch to 22-inch.

Price, each \$0.50

No. 333. Will take machine screw taps Nos. 14 to 30, and hand taps 16-inch to 1/2-inch.

Price, each \$1.00

THREAD WELL SCREW PLATES.



No 300

HAND TAPS.



S. A. E. Standard Plug.

Threads,	Price,
Size. per Inch.	Each.
½-inch	\$0.45
<sup>5</sup> σ-inch	.50
3/s-inch	.55
1 <sup>7</sup> ε-inch	.60
½-inch	.70
<sup>9</sup> / <sub>16</sub> -inch	.80
%-inch	.90
16-inch	1.05
¾-inch	1.20
%-inch	1.60
1 -inch	2.00
Left-hand threads, special price.	THE PARTY OF

76, 456 P. C. ¼ to ¾, 401 P. C. 76 to ¾, 302 P. C.

MACHINE SCREW TAPS.



Furnished Taper, Plug and Bottoming.

В	asic	No. of	Threads		
Screw Ou	tside	to th	ie Inch.		
Gage Dia	meter		Also		Price
No. In	ches.	Std.	furn'd	. 1	Each
0	.060	80			\$0.50
1	.073	72	56, 64		.50
2	.086	64	56		.45
3	.099	56	48		.40
4	.112	48	32, 36, 40		.40
5	.125	44	36, 40		.35
6	.138	40	32, 36		35
7	.151	36	30, 32	-751	.35
8	.164	36	30, 32, 40		.35
9	.177	32	24, 30		.35
10	.190	30	24, 28, 32		.40
12	.216	28	24, 32		.45
14	.242	24	20		.45
16	.268	22	20		.45
18	.294				.50
		20	18		.50
20	.320	20	16, 18	100	.00
Furnished with	left-hand	threads	at extra	price.	

Furnished with left-hand threads at extra price No. 12 and smaller, 457 P. C.

No. 13 and larger, 401 P. C.

# LITTLE GIANT FULL MOUNTED STOCKS.



U. S. S. Threads furnished unless otherwise specified.
Sizes, dimensions and threads not listed are subject to special prices. Left-hand dies are special.

In ordering dies, specify outside diameter of collet.

Note.—Little Giant Dies, A. S. M. E. Standard Screw
Gauge Nos. 2 to 20, other regularly furnished machine screw
sizes and pitches, and fractional sizes 1/4 to 1/4-inch U. S.
S. threads can be furnished at \$0.75. These dies fit 11/4-inch

diameter collets.

Diam. Collets,								
	Price Die,	Each,	N	o. Thre	ads per in.	Fur-		
Cutting		2"234	" St	andar	d Pitches,	nished		
Sizes. 11/4	" 15/8"	4"41/2"	" U	I.S.S.	S.A.E.	U.S.F.		
1/4 \$0.		\$1.00		20	28	24-27-32		
ŕ	1.00	1.00		18	24	20-27-32		
3/8	1.25	1.25		16	24	20-27		
7g		1.25		14	20	24-27		
1/2		1.50		13	20	12-24-27		
rg		1.50		12	18	27		
5/8		1.75		11	18	12-27		
12		1.75		11	16			
3/4		2.00		10	16	12-27		
18		2.75		10	The land to the land			
7/s		2.75		9	14-18	12-27		
18		2.75		9				
1		2.75		8	14	12-27		
11/8		4.00		7	12			
11/4		4.00		7	12			
13/8		5.00	1 11	6	12			
11/2		5.00		6	12			
Mata 9	inch dies	0.00		talea	dia simon	3. 1/ inch		

Note-2-inch diameter collets take die sizes 10-1/2-inch

inclusive.

2¾-in. diameter collets take die sizes ¼ to 1-in, inclusive 4-in, diameter collets take die sizes ½ to 1¼-in, inclusive, 4½-in, diameter collets take die sizes ½ to 1½-in inclusive.

54 P. C.

HEXAGON RETHREADING DIES.



They are used principally for repair work, and for dressing over bruised or rusty threads.

They can be used in bit brace sockets, ratchet or monkey wrenches, and will be found convenient in many ways.

These Dies are simply for cleaning up threads, and are not made for cutting full threads.

All orders will be filled with U. S. S. Threads unless otherwise specified.

	Threads to Inch,	Threads to Inch,	Price,
Size.	U. S. Stand.	S. A. E.	Each.
	20	28	\$0.70
	18	24	.80
	16	24	.90
T6		20	1.00
	13-12	20	1.10
1°G		18	1.20
5/8		18	1.40
18		16	1.60
3/4	10	16	1.80
7/8	9	14-18	2.10
1	8	14	2.40
11/8	7.	12	2.80
11/4	7	12	3.20
13/8	6	12	3.60
11/2		12	4.00
		P. C.	120



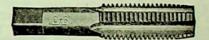
					Stock,
	Length of				Die, &
Size.	Stock, In.	Stock.	Die.	Guide.	Guide.
16-in	. 8%	\$1.60	\$1.00	\$0.30	\$2.90
1/4-in	83/4	1.60	1.00	.30	2.90
ýa-in	. 83/4	1.60	1.00	.30	2.90
3/s-in	131/2	1.90	1.25	.30	3.45
16-in	. 131/2	1.90	1.25	.30	3.45
½-in	$20\frac{1}{2}$	2 25	1.50	.50	4.25
re-in	201/2	2.25	1.50	.50	4.25
5/s-in	251/2	2.75	1.75	.50	5.00
16-in	251/2	2.75	1.75	.50	5.00
¾-in	251/2	2.75	2.00	.50	5.25
in-in	29	3.25	2.00	.50	6.50
%-in	29	3 25	2.75	.50	6.50
1å-in	29	3.25	2.75	.50	6.50
1 -in	29	3.25	2.75	.50	6.50
Left-hand Die	s and Taps	are S	pecial Price.		

HAND TAPS.

56 P. C.



Taper.



Plug.



Bottoming.

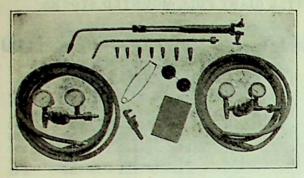
Tap			U	. S. S	Stand	ard Thre	ad.		
Dia	m-								Price,
ete	r.								Each.
10	No.	Threads	to	Inch	24	Weight,	each.	1 oz	\$0.35
1/4	**	"	**	**	20	"	**	1 oz	
15	**	"	"	"	18	"	**	1 oz	50
3/8	**	**	"	**	16	"	**	1 oz	
70	"	"	"	"	14	**	**	1 oz	60
1/9	**	"	**	**	13	"	**	2 oz	
29,	**	"	**	"	12	"	**	3 oz	
5/6	**	**	**	**	11	**	**	4 oz	
1/4 56 3/8 76 1/2 96 5/8 116	ee .	. "	**	**	11	**	**	5 oz	
3/4	**	**	*	"	10	**	**	6 oz	
13	**	**	**	40	10		**	8 oz	
7/8	**	**	**	**	9	**		9 oz	4 44
15	ic	**		a	9		•	11 oz	4 00
1 10	**	"	**		8	"	44	12 oz	
11/8	**	"	**	**	7	**	**	16 oz	
11/4	**	**	**	**	-		**	19 oz	0.00
13%	"	"			6			25 oz	
	"	"	"	a	6	"			
11/2	1000		-	-	0			30 oz	. 3.00

Furnished with left-hand threads at extra price.

These taps are furnished U. S. Standards unless otherwise specified, we also carry shinch over size, be sure to mention which is wanted.

14-in., 451 P. C.; 1/4 to 3/8 in., 406 P. C.; 1/4 to 3/8 in., 302 P. C.; 1/4 to 1-in., 257 P. C.; 1/8 to 11/2-in., 53 P. C.

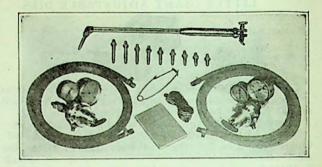
Oversize Taps, ¼ to 3/6-in., 354 P. C.; 16 to 5/6-in., 258 P. C.; 16 to 11/2-in., net.



# WILLIS

Manufactured since 1907

Thousands in Use



# UNEXCELLED WELDING APPARATUS. A4. Welding Outfit.

This torch is known as Model A4 and is of the equal pressure, non-backfire type. It is particularly well adapted for repair work as the torch extension furnished permits of welding on extremely heavy work with comfort to the operator. Our patented regrinding cocks are used exclusively on our torches.

The regulators furnished with this outfit are of our own make. Nothing but metal enters into the construction of these regulators, even the seats being of metal instead of hard rubber or composition.

One welding torch.

One torch extension for heavy work.

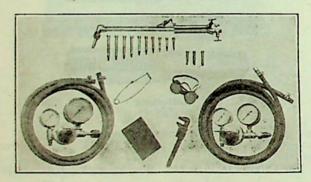
Eight welding tips of different capacity-numbers 2 to 9, inclusive. If desired, smaller or larger tips can be furnished at an additional cost of \$1.00 each.

One oxygen regulator with 3000-lb, and 30-lb, gauges. One acetylene regulator with 500-lb. and 30-lb. gauges. One 12-foot length of oxygen hose with connections. One 12-foot length of acetylene hose with connections.

One pair of welding glasses.

One torch wrench.

One book of instructions. 4A Outfit (all packed in a neat wooden case). Price..\$56.00



Style F2. Duplex Welding and Cutting Outfit.

This outfit consists of the following: One Style .F2 Duplex Welding and Cutting torch, with 10

welding tips, No. 1 to 10-inch, and 4 cutting tips.
One Oxygen Regulator with 2 gauges.
One Acetylene Regulator with 2 gauges.

Two 121/2-ft. pieces of hose.

One pair goggles. One Wrench.

One book on welding.

Price, as shown above.....\$100.00 

# AUTOMATIC MOTOR FEED SIMPLEX GENERATOR.

This Generator has a capacity of 35 pounds of carbide per charge and will therefore produce approximately 160 cubic feet of acetylene. It is operated by a weight motor. It has a novel locking device which by simply turning a lever locks the carbide in the hopper.

With this generator you have the purest of gas, nothing but high-grade carbide and pure water being employed.

Should a generator regulator be desired we will furnish one at an additional cost of \$10.00. 35 lb. Price, each.....\$86.00

No. 4. Welding Outfit.

This No. 4 outfit is suitable for all classes of work, from the lightest to the heaviest. The torch mixes the gases in the tip under equal pressure, largest tip using only 71/2 lbs. pressure of oxygen and acetylene.

The outfit consists of the following:

One Model A2 welding torch, 22 in. long, with 10 tips. One 3-in. Oxygen regulator with two large gauges. One 2-in. Acetylene regulator with two large gauges.

Two 121/2-ft. lengths of rubber hose.

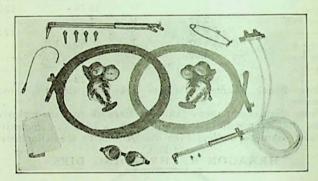
One pair fibre goggles.

One Pyro lighter.

One welding book (230 pages).

One wrench.

No. 4. Welding outfit. Price.....\$95.00



No. 6. Welding and Battery Service Outfit.

A special outfit for garages and auto repair shops for welding metal up to it-in. thickness.

Three-in-One Welding, Leadburning and Carbon Removing.

This outfit consists of the following:

One Model A3 welding torch, 17 in. long, with 5 tips.

One Oxygen regulator with two gauges.

One Acetylene regulator with two gauges.

Two 121/2-ft. pieces rubber hose.

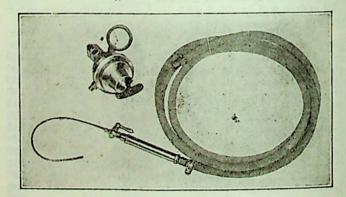
One No. 12 leadburning torch, with hose and bench block.

One Carbon removing tip.

One Pyro lighter.

One pair goggles.

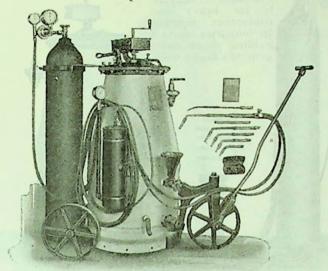
One book on welding. 



WILLIS CARBON REMOVING OUTFIT. No. 15. Torch, hose and regulator.....\$15.00

List Net.

NO. 63 SMITH'S WELDING AND CUTTING EQUIPMENT.



Outfit consists of-

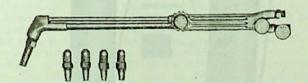
- 1-No. 6 Torch with complete Tips 1-3-5-7-9 and 9-inch extension section.
- 1-No. 600 Cutting Tip with one Tip End, complete.
- 1-Automatic Oxygen Regulator with 3,000-lb. and 80-lb. gauges, hose connection and drum connection.
- 1-(30-lb, carbide capacity) Automatic Acetylene Generator.
- 2 lengths Double Strength Welding Hose.
- 1-Carbon Burning Tip.
- 1-Pair Welding Spectacles with steel case.
- 1-Instruction book.

No. 63LDG. Price, with Locking Device Generator;
No truck\$290.00
No 63T Price with Truck as shown

# SMITH'S LOCKING DEVICE GENERATOR.

30-lb. carbide capacity. Price, each.....\$185.00

NO. 15 SMITH CUTTING TORCHES.



Note the large milled wheel that operates the cutting jet valve. This valve is made with a double pitch thread so that it opens rapidly and stays where it is set. For heavy hot work you cannot beat this torch. All copper tips.

This torch is especially adapted for piercing holes up to

0
0
0
s.
680
-

List Net.

SMITH'S NO. 1 LIGHT DUTY WELDING, CUTTING AND DECARBONIZING OUTFITS.

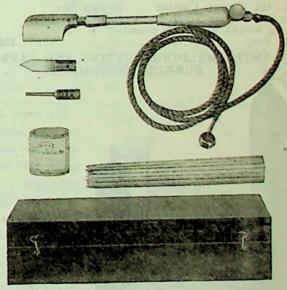


A high quality outfit for light welding and cutting. It includes the famous No. 4 Pistol Grip Torch. Ideal for the garage or machine shop doing light welding and cutting

This outfit includes-

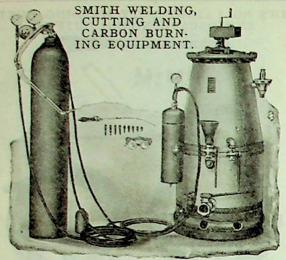
- 1-No. 4 Pistol Grip Torch, 18-inch length.
- 6—Welding Tips, sizes 1, 2, 3, 4 brass, 5, 6 copper.
  1—No. 0 Lead Burning Tip.
- 1-No. 404 Cutting Tip.
- 1-Oxygen Regulator (single gauge).
- 1-Acetylene Regulator (sin-
- gle gauge). -121/2-ft. lengths Standard Welding Hose.
- 1-Spark Lighter.
- !-Carbon Burning Torch.
- 1-Pair Welding Spectacles.

Price, complete \$75.00 SMITH'S CAST IRON SOLDERING OUTFIT.



With this outfit you are equipped to repair Scored Cylinders, Cracked Water Jackets, Cylinder Heads, Oil Leaks in cast iron or steel crank cases, Gasoline Tanks, Radiators, Connections, etc. It is most excellent for filling holes or flaws in castings. No preheating is necessary. Outfit consists of-

- 1—Acetylene Soldering Iron. 1—Regular 1-lb. Soldering
- Bit. 1-Radiator Soldering Bit. 1-Hatchet Shaped Solder-
- ing Bit. 1–6-ft. length Hose and
- Connections.
- 1-Prest-O-Lite Lighting Tank Connection.
- Lbs. Smith's Cast Iron Solder.
- Can Soldering Powder.
- Carrying Case.
- 1-Directions for use.
- Price, complete ..... Cast Iron Solder only, per lb..... Soldering Powder, per can..... List Net.



This is the standard Smith Welding Equipment. gest the installation of this equipment in all localities, even where acetylene is easily obtainable compressed in cylinders. The saving effected by using Smith's Automatic Acetylene Generator will pay for the added investment in the lower cost of acetylene.

# THE COMPLETE EQUIPMENT.

- 1-Smith 30-lb. carbide ca- 1-Smith Automatic Oxygen pacity Automatic Acetylene Generator.
- 1-No. 4 Smith Welding Torch (specify length desired-14-in., 18-in, or 22-in.) with hose connections, 4 brass tips and 3 sectional copper tips.
- 1—No. 404 Copper Cutting Tip for Welding Torch.

Shipping weight, about 270 pounds.

Regulator with 3,000-lb. and 80-lb. gauges, hose connection and drum connection.

2-Lengths Smith doublestrength welding hose.

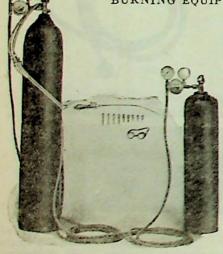
Smith Carbon Burning

Torch.

Pair Welding Spectacles in steel case.

1-Instruction Book.

No. 3. Price.....\$260.00 MITH WELDING, CUTTING AND CARBON BURNING EQUIPMENT.



For those desiring a portable outfit we recommend the No. 2 equipment. For industrial plants where repairs are only occasionally necessary this equipment is very satisfactory.

# The Complete Equipment.

1-No. Torch (specify length desired, 14-in., 18-in., or 22-in.) with hose connections, 4 brass tips, and 3 sectional copper tips.

No. 404 Cutting Tip for Welding Torch.

1-Smith Automatic Oxygen Regulator with 3,000-lb. and 80-lb. gauges, hose connection and drum connection.

1-Instruction Book. 

 No. 2. Price with truck
 \$130.00

 No. 2. Price without truck
 120.00

 .....\$130.00

- 4 Smith Welding 1-Smith Automatic Acetylene Regulator with 500lb. and 50-lb. gauges, hose connection drum connection.
  - 2-Lengths Smith double strength welding hose.
  - 1-Smith Carbon Burning Torch.
  - 1-Pair Welding Spectacles in steel case.



1--Smith 30-lb. Carbide Capacity Automatic Acety-

lene Generator. 1-No. 6 Welding Torch with hose connections and Nos. 1, 3, 5, 7 and 9 tips and 9-inch extension.

-No. 600 Cutting tip.

Smith Automatic Oxygen Regulator with 3,000-lb

and 80-lb. gauges, hose connection and drum connection.

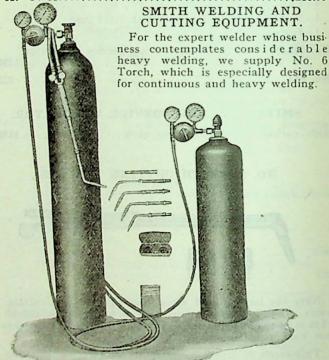
2-Lengths of Smith double strength welding hose.
-Smith Carbon Burning

Tip. -Pair Welding Spectacles

in steel case.

1-Instruction Book.

Shipping weight about 270 pounds.
No. 63. Price....



1-No. 6 Smith Welding Torch with hose connections and Nos. 1, 3, 5, 7 and 9 tips and 9-inch extension.

1-No. 600 Cutting tip.

1-Smith Automatic Oxygen Regulator with 3,000-lb. and 80-lb. gauges, hose connection and drum connection.

- 1-Smith Automatic Acety lene Regulator with 500lb. and 50-lb. gauges, hose connection and drum con nection
- 2-Lengths Smith double strength welding hose.
- Smith Carbon Burning Tip.
- 1-Pair Welding Spectacles in steel case.

1-Instruction Book.

List Net.

SMITH AUTOMATIC ACETYLENE GENERATORS.



In small welding or blacksmith shops or in garages the most practical size generator is the 30-lb. size. For larger shops where several torches are in continuous use we recommend larger generators according to gas requirements.

All Smith Generators are made with a heavy rust-resisting metal shell which will last for years. All seams welded. Large diaphragm type safety valve which will not get out of order. Rust-proof case encloses the spring motor which requires a little oil every three or four months—all the attention necessary.

Generators shut off automatically at any desired pressure which is regulated by a set screw at the top of the motor. The speed of the motor is automatically governed by the gas pressure.

There are no moving metal parts in contact with the carbide.

Supplies Pure Gas.

The strong, sturdy motor drops the lumps of carbide deep into the water in the bottom of the generator. The rising bubbles of acetylene are washed free from all impurities and the gas is further washed and filtered in the filter

tank at the side of the generator before it is used.

The Smith generator uses 1½x¾-in. carbide, which produces from ¼ to ½ cu. ft. more gas per pound of carbide than the finer sizes. These large, heavy lumps of carbide sink to the bottom of the water in the generator and the gas bubbles up through the gallons of cold lime water (the best purifier for acetylene) and thus insures a clean.

cool, pure gas which is so necessary to good welding.

Do not use the finer sizes of carbide such as ¼ in. x ½ in.
or finer. Fine carbide when it comes in contact with water
immediately is surrounded with bubbles of gas and is so
light that it is buoyed up by this gas, and held at the top
of the water. The gas so generated, which receives no
washing, is delivered full of carbide dust and impurities
and also retains a great deal of the heat of generation.
When using the large size carbide this heat is absorbed by
the water.

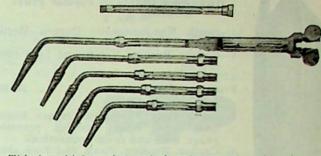
the wa			
30-lb.	Carbide	Capacity\$175.00	
50-1b	Carbide	Capacity 250.00	
100-lb	Carbide	Capacity 400.00	
200-15	Carbide	Capacity	

# COPPER CUTTING TIPS FOR NO. 4 SMITH WELD-ING TORCH.



Interchangeable with welding tips, it takes only a few seconds to change. Where only light cutting is done it is indispensable. This feature found only on Smith torches. No. 404—Cutting capacity 2 inches. Each............\$6.00 No. 405—Cutting capacity 4 inches. Each...........\$6.00

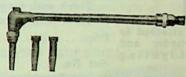
# NO. 6 SMITH'S WELDING TORCH.



This is a high-grade torch for the expert welder in exclusive welding shops, or in railroad shops and foundries where heavy or continuous welding is done. Torch is composed of handle, fluted brass section, drilled copper bar (not tubing) and copper tip end. The fluted section, copper bar and tip end comprise a complete tip assembly. Torch is light weight.

No. 6 Torch with Complete Tips extension section				
Tip sizes				8
Complete tip assembly	\$6.00	\$6.50	\$7.50	\$8.50
Tip Sizes	9	10	11	12
Complete tip assembly	\$9.50	\$10.50	\$11.50	\$12.50
Copper tip ends for tips, sizes 1 to	5, each.			.\$1.75
Copper tip ends for tips, sizes 6 to	12, each	1		. 2.25

# COPPER CUTTING TIPS FOR No. 6 SMITH WELDING TORCH.



No. 600 Cutting Tips are interchangeable with welding tips, takes only a few seconds to change. When ordering specify size of tip end required. When not specified we regularly supply No. 602.

No. 600 Cutting Tip with one tip end, complete ..... \$12.50

Extra Tip Ends.		
No. tip end	602	603
Cutting capacity, inches 1	21/2	6
Price, each\$5.00	\$5.00	\$5.00

# NO. 4 SMITH PISTOL GRIP WELDING TORCH.



This is a high-grade welding torch. It has a perfect balance and comfortable grip that prevents fatigue.

Note the oxygen valve right under your thumb. Any slight adjustments of flame can be made without laying down welding rod or stopping the weld.

The No. 4 Torch is made in three lengths, 14-inch, 18-inch, 22-inch.

The 14-inch is handy for light work. Weighs 21 ounces.

The 18-inch is the right length of torch for ordinary repair work. This size is usually desired for standard welding equipment. Weighs 26 ounces.

The 22-inch size is suited for heavy welding where it is desirable to stand as far as possible from the work. Weighs 28 ounces.

No. 4-All sizes,	, without tips, each\$25.00
	, with 4 Brass. and 3 Sectional Copper
Tips	40.00



# SMITH CARBON BURNING OUTFITS.

High-Grade Outfits at Popular Prices.

#### No. 4.

1-Smith Non-Automatic Oxygen Regulator.

1-Carbon Burning Torch and hose connection.

-Length hose.

Price .....\$12.00

#### No. 2.

1-Smith Pony Automatic Oxygen Regulator with 80-lb. working pressure gauge, hose and drum connections.

Carbon Burning Torch and hose con nection.

-Length hose.

.....\$20.00 Price .....



Set No. 1 attached to

Automobile Lighting

Cylinder and

# SMITH LEAD BURNING OUTFITS.

For lead fusing and burning on lead connections, plates, etc., by storage battery repair men, using Oxygen and Acetylene.

# Set No. 1.

1-Smith Automatic Pony Oxygen Regulator with working pressure gauge.

Smith Automatic Pony Acetylene Regulator with working pressure gauge.

1-Smith No. 12 Lead Burning Torch with 6 tips.

2-6-foot lengths rubber hose.

Price .....\$42.00

# Set No. 2.

1-Smith's non-Automatic Oxygen Regulator.

1—Smith's non-Automatic Acetylene Regulator. 1—Smith's No. 12 Lead Burning Torch with 3 tips.

2-Smith's 6-ft. lengths rubber hose.

Note-Either of above outfits can be furnished for Oxygen and Hydrogen or Oxygen and City Gas or Natural Gas

at the same price. When city gas is used the acetylene regulator may be dis-

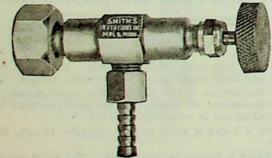
pensed with.

Oxygen

Cylinder.

When ordering either set state the type of acetylene cylinder to be used.

SMITH'S NON-AUTOMATIC REGULATOR.



For use with Oxygen and Acetylene or Hydrogen for Lead Burning or Carbon Burning outfits.

No. O-With right-hand connection for oxygen cylinders. Each.....\$6.50 No. H-With left-hand connection for hydrogen cylin-No. CL—For automobile acetylene cylinders. Each... 6.50
No. S—For Searchlight acetylene molding. Each . No. WC-For Prestolite acetylene welding cylinders.

Each .....

SMITH KEROSENE PRE-HEATING TORCH.

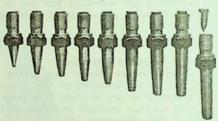
The kerosene is not fed under pressure. An air line carrying about 40 to 80 pounds pressure draws kerosene by vacuum system and at the same time converts it to gas. A separate valve controls the kerosene flow.

You simply light this torch with a match. It does not require heating up of the nozzle to get the kerosene gas started. The nozzle may be screwed off and when removed the torch makes an excellent kerosene spray for cleaning motors, transmission cases, differentials, etc.

The torch flame may be regulated to vary from 6 inches to 4 feet. Elbow casting may be screwed on the nozzle, thus turning the flame at a right angle in any direction. The kerosene tube is simply dropped into any container of

An attachment for burning crude oil can also be furnished. Supplied with 121/2 feet air hose, 61/4 feet oil hose and 

BRASS WELDING TIPS FOR SMITH PISTOL GRIP WELDING TORCHES.



Note the mixing nozzle which is a part of each of the tips for No. 4 Smith Welding Torches. It insures a correct mixture of gases and a neutral welding flame. Sizes Nos. 1 to 9, inclusive. Each.....\$1.50

SMITH'S SPECIAL SECTIONAL COPPER TIPS.



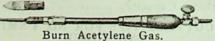


Solid copper, having greater heat conductivity and a higher melting temperature than brass, is much more durable for heavy welding work. Tips, sizes from No. 1 to No. 10, inclusive. Price, each. .\$3.50

 Sizes 11 to 15, inclusive
 4.00

 Extension Sections (see cut)
 Each
 2.00

# SMITH'S SOLDERING COPPERS.



For use with acetylene cylinders or generators.

Bits are pure copper.

Illustration shows Regular and Radiator Bit, the top and bottom illustrations respectively.
Complete with Regular Bit and Special Radiator Bit...\$8.50

Extra Bits. Each....

Smith City Gas Soldering Coppers. Constructed to burn city gas instead of acetylene, and is supplied with one cast copper bit.

Price, each ......\$10.00 List Net.

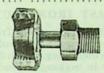
# SMITH'S ADAPTORS AND CONNECTIONS.



No. 3 Adaptor. Connects Vulcan Oxygen regulator to Linde Oxygen cylinders. Price, each .....



No. 1 Adaptor. Connects acetylene regulator fitting Searchlight welding cylinders to Prest-o-Lite welding cylin-Price, each.....



4 Adaptor. Connects acetylene regulator fitting Searchlight or Commercial welding cylinders to automobile lighting tank. Price, each ...



No. 6 Adaptor. Connects acetylene regulator fitting Prest-o-Lite welding cylinders to automobile lighting tank. Price, each.....\$2.00



No. 6 Hose Connection. For joining two lengths of hose. Price, each .....\$0.30



Needle Valve-Used on torches, soldering coppers, generators. Supplied in 1/4 inch only, with wheel or tee handle. Price, each.....



No. 7 Hose Connection. For joining hose to torches, regulators, soldering coppers, etc. Price, each ......\$0.30



Soldering Copper Mixing Chamber, complete. Specify whether for city gas or acetylene soldering copper. Price, each .....



No. 8 Hose Union to couple two lengths of hose that have No. 7 hose connections applied. Price, each ..... List Net.



Mixing Nozzle. For mixing chamber of acetylene soldering copper. Specify whether for city gas or acetylene soldering copper. Price, each .....\$0.25

minths &

No. 8 Adaptor. Connects acetylene regulator fitting automobile lighting tank to Prest-o-Lite welding cylinders. Price, each ......\$2.00

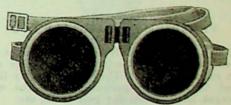


No. 9 Adaptor. Connects acetylene regulator fitting automobile lighting tank to Searchlight or Commercial welding cylinders. Price, each ......\$1.50



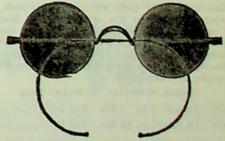
No. 7 Adaptor. Connects acetylene regulator fitting Presto-Lite welding cylinders to Searchlight or Commercial welding cylinders. Price, each .....\$2.25

# SMITH'S FIBERWELD GOGGLES.



Non-Metallic Vulcanized Cups. Do not conduct heat, no flying particles or unfiltered light can reach the eye. lenses protected by outer lenses of clear glass. All lenses removable. Adjustable bridge. Price, each ......\$3.25

#### SMITH'S WELDERS' SPECTACLES.



Strong, rigid, white metal frame; rust proof; solid nose piece. Lenses, 2 inches diameter; curved lenses. Medium dark smoked. Price, each, no case.....\$1.00

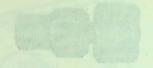
# SMITH'S WELDING HOSE.

Double length, corrugated welding hose, will hold a work ing pressure of 300 lbs. It is light, flexible and will stand hard usage; red or black. Price, per foot.....\$0.30

List Net.

# WELDING SUPPLIES





### CAST IRON FILLER ROD.

These Filler Rods are made from iron, very high in silicon and low in carbon. It melts readily, and flows smoothly, yet work may be "built up" with ease. When used with Cast Iron Flux a soft, close-grained weld, that is free from pinholes, is assured. The weld may be sawed, filed or machined.

%-inch diameter, 18 inches long. f6-inch diameter, 20 inches long. ¼-inch diameter, 20 inches long. f6-inch diameter, 14 inches long.

#### CAST IRON FILLER RODS.

	1 to 5 Lbs.	6 to 10 Lbs.	11 to 25 Lbs.	26 to 50 Lbs. F	
ra-inch	165	144	. 136	126	\$0.50
¼-inch	147	134	135	123	.40
fe-inch	131/24	121/21	121/24	126	.35
%-inch	136	125	113	101	.30

# GENUINE SWEDISH IRON FILLER ROD.

Especially prepared for welding purposes. Used for various kinds of welding in steel, iron and semi-steel.

¼-inch diameter, 36 inches long. 18-inch diameter, 36 inches long.

Size	re-inch.	Per	lb168	\$0.40
Size	1/4-inch.	Per	lb	.40

# VANADIUM STEEL FILLER ROD.

This steel is made especially for us, and is the only steel welding rod which gives perfect results. One melting is left off in its manufacture. This is supplied by the welding flame, and the result is perfect steel in the weld. For welding crank shafts, replacing gear teeth, etc.

1/4-inch diameter, 16 inches long.

Size 1/4-inch.	In lots 1 to 5 lbs.	Per lb283	\$0.60
Size 1/4-inch.	In lots 6 to 10 lbs.	Per lb246	.60

# ALUMINUM FILLER ROD.

Most aluminum filler rods are either too soft to furnish the necessary strength in the weld, or, if a harder rod is used, the operator finds difficulty in fusing the filler rod with the part to be welded. These difficulties are overcome in Aluminum Filler Rods. They possess great strength and toughness, and when used with Aluminum Flux, perfect fusion is easily accomplished.

1/4-inch diameter, 20 inches long.

Size 1/4-inch.	In lots 1 to	5 lbs.	Per lb801	\$2.00
Size 1/4-inch.	In lots 6 to	10 lbs.	Per lb753	2.00

# MANGANESE BRONZE FILLER ROD.

For welding brass and bronze. This material is exceedingly hard and tough, and should always be used in a weld or braze where great strength is necessary.

1/4-inch diameter, 16 inches long.

Size 1/4-inch.	In lots	1 to	5 lbs.	Per lb856	\$1.30
Size Winch.	In lots	6 to	10 lbs.	Per lb832	1.30
Size 1/4-inch.	In lots	11 to	25 lbs.	Per lb824	1.30

### TOBIN BRONZE FILLER ROD.

This bronze is a very smooth, free-flowing material, much stronger than brass; should be used for all ordinary brazing, and especially where the nature of the work is such that the bronze must flow deep into close spaces.

¼-inch diameter, 16 inches long.

The same of the same of	to 5 Lbs.	6 to 10 Lbs.	
Size 18-inch	601	556	\$1.40
Size ¼-inch	453	402	1.30

### CAST IRON FLUX.

The use of this Flux on a Cast Iron Weld, made with our Filler Rod, insures a uniformly soft, close-grained weld, free from pinholes, which may be drilled or machined. It is a positive necessity in making a good steel weld; it causes the metal to flow smoothly, and keeps it from burning.

# 

#### ALUMINUM FLUX.

This is the superior of any Aluminum Flux upon the market; it cuts the oxide thoroughly, and insures a perfect weld. No puddling rod is required.

1-Pound Car	s. Price	each	407	\$3.00
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# BRASS, BRONZE AND MALLEABLE IRON FLUX.

# BLACK OXIDE OF MANGANESE.

# CHLORATE OF POTASH CRYSTALS.

# MEDIUM COARSE POWDERED BONE. For Case Hardening.

# WELDING GLASSES.



# Colored for Best Protection.

# CUTTERS GOGGLES.



#### SMITH'S CAST IRON FLUX.



For removing impurities, oxide, sand, etc., found in welding iron castings. Smith Flux produces a weld of fine, close-grained texture, soft and tough. Finished work is easily machined with slight probability of shrinkage cracks after cooling. Put up in twelve-ounce packages. Each .....

#### SMITH'S BRASS AND BRONZE FLUX.



Used in all brass and bronze welding to prevent oxidation of lead, zinc and copper contents. Smith Flux reduces the temperature where the fuse takes place, resulting in a very small welding flame, less heat and consequently a satisfactory job. Can also be used when welding copper or mal-leable iron castings. Put up in twelve-ounce packages. Price, per package.....\$0.50

#### SMITH'S ALUMINUM FLUX



Prevents bubbles and oxidation in aluminum welding. Causes the metal to flow freely, under hard conditions. Cleanses the weld from impurities, breaks up the film of oxide always present in this difficult operation. In onepound cans. Price, per pound......\$4.25

SMITH'S CAST IRON SOLDERING FLUX.

Price, per can.....\$1.00

#### SMITH'S CARBON PUTTY.

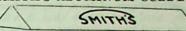
Used for forming a mould to back up cast iron or aluminum crank cases retaining shapes and thread of bolt holes, moulding lugs, corners, etc. It is general carbon plastic, replacing carbon rods, blocks, etc. Can be moulded in special shapes to retard flow of metal. Put up in five-pound pack-Price, per package.....\$2.50

### SMITH'S SPECIAL SOLDER.



For use in repairing scored cylinders, cracked water jackets, etc., also used for soldering cast iron. Price, per pound......\$2.75

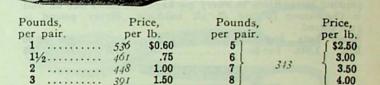
#### SMITH'S ALUMINUM SOLDER.



For use in soldering aluminum. Used with an ordinary clean soldering iron or a blow pipe or torch. In four-ounce

Price, per pound......\$2.40

# SOLDERING COPPERS.



4 ..... In ordering these Coppers, be sure to state if the weight

2.00

is to be for one only or one pair.

366

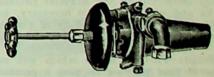
Example.-If order reads one pair 2-pound Soldering Coppers, we send two Coppers, weighing 1 pound each. If order reads one only 2-pound Soldering Copper, we send one Copper, weighing 1 pound.

### OXY-ACETYLENE PORTABLE TRUCKS.



This truck is very useful to the user of a welding outfit, it conveniently holds the oxygen cylinder and acetylene cylinder and attachments and makes it very easy to move the outfit to the other side of the welding stand, to a large 

# HYDRO-CARBON BURNERS.



This Burner is made in the form of a hollow conical spindle. There are seven vaporizing chambers, so con-structed that they can be easily cleaned by simply removing the plugs. The rapidly escaping hydro-carbon vapors induce a strong inflow of air through passages located in the outer end of the burner. The vapor and air mix together in the enlarged central chamber of the burner, and are ejected in a compressed state, generating intense heat. Each burner is fitted with a ground joint, so that it can be adjusted to any desired angle.

#### Improved Hydro-Carbon Burner,

Gasoline.	Price,	each5009	\$5.50
Kerosene.	Price,	each5006	5.50

#### MERIT BEARING METALS.



#### The Universal Babbitt.

Merit Metal is an alloy, for general all around use, composed of exact percentages of lead, tin, antimony and cop-per; is so dense, hard and tough that it will not squash under heavy loads and heavy pressures as do most installations of moderate cost metal. It is not claimed that this dependable liner for high speed and heavy duty journals is equal to nickel or genuine babbitts, but for the moderate price sold at, its durability is unequalled.

Merit Metal is the practical alloy to standardize as your moderate cost service metal. Excluding the few journals operated under extremely severe conditions, it answers your

purpose in all types of bearings and kinds of machinery.

Packed in boxes of 28, 56 and 112 pounds with complete pouring instructions in every package. It flows like oil and is the easiest to use of all babbitts. Every pound is guaranteed.

Box Lots. Per lb......251

#### XXXX NICKEL.



Armatures, automobiles, air plane engines, heavy duty mine motors, concentrators, Griffin mills, sugar centrifugals, crank pins, crushers and many other journals operated under extraordinary speed and pressure, require the finest, hardest and toughest alloy that can be produced if durability of liner is essential. The most durable bearing alloy.

Boxes of 28, 56 and 112 lbs.

# LIBERTY MOTOR GENUINE.



For bearings subjected to the heaviest pressures, loads, strains, shocks and vibrations, it is necessary, in order to gain durability, that the alloy used be of tin base, otherwise its body will not be strong enough to resist the extreme pressure.

A prime Straits Tin-base metal which will successfully answer wherever your purpose requires a genuine babbitt. Boxes of 28, 56 and 112 lbs.

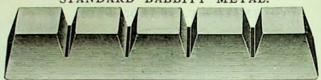
#### PHOSPHOR BRONZE BABBITT METAL.

Where high speed, heavy pressure service is not considered severe enough to strictly justify the use of "Genuine" or higher grade metals, Phosphor Bronze Babbitt Metal may be used with very satisfactory results.

This brand contains approximately 65 per cent of tin, and is hardened with phosphor, copper and antimony. Many engine builders are getting satisfactory results from the use of Phosphor Bronze Babbitt Metal.

Often used on woodworking machinery and cement mills 

# STANDARD BABBITT METAL.



Is made by following standard formulas for the dif-ferent grades. The efficiency of this metal is determined by the service given, not by the price. No. 1 is used for heavy pressure and high speed; No. 4 for low pressure and low speed; No. 2 and No. 3 for intermediate pressures and

No. 1.	Full	boxes	about	65	pounds.	Per lb 111/43	\$0.25
No. 2.	Full	boxes	about	65	pounds.	Per lb101/26	.24
No. 3.	Full	boxes	about	65	pounds.	Per lb 91/21	.22
No. 4.	Full	boxes	about	65	pounds.	Per lb 81/23	.20

### SOLDERS.

# STRICTLY HALF & HALF

# Strictly Half and Half Solder.

For roofing and other tin work, this grade is usually considered THE Solder. It flows smoothly under the iron, carries a seam of uniform thickness, which adheres strongly to the surface of the sheets. 45 parts tin; 55 parts refined lead. Put up in two-pound bars. 

#### Warranted Half and Half Solder.

For galvanized and tin plate work requiring a very heavy seam, and for plumbers' use, 50 parts tin; 50 parts refined lead. Put up in two-pound bars. List Price, per pound.....

#### ALUMINUM SOLDER.

# REINHOLD "NOFLUX" ALUMINUM SOLDER

No Flux Solder is recognized as the highest standard. Any one can use it. Two-ounce bars. 

WIRE OR STRING SOLDER.

 Per pound.
 353

 Per 5-pound spool.
 1506

# MALLEABLE MELTING LADLES.



# No. 7800.

A. 3-inch Bowl. Lead Capacity, 2 lbs. Price, each. \$0.16
B. 4-inch Bowl. Lead Capacity, 4 lbs. Price, each. .22
C. 5-inch Bowl. Lead Capacity, 7 lbs. Price, each. .35
D. 6-inch Bowl. Lead Capacity, 12 lbs. Price, each. .40
List, Plus 306 P. C.

# KESTER ACID CORE WIRE SOLDER.



Kester Acid Core Wire Solder.

Is a self-fluxing wire solder. The solder is a hollow wire, filled with an acid flux, which flows as the solder is used. It will solder any metal except aluminum.

Use it for radiator leaks, spark plug terminals, gasoline pipe, tank joints, etc. Carried in 1-pound coils and 5pound spools.

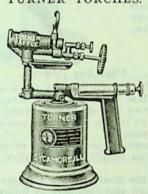
Price per pound, 1-pound spools.......483 \$0.61 Price per pound, 5 and 10-pound spools...........467

#### TURNER TORCHES.

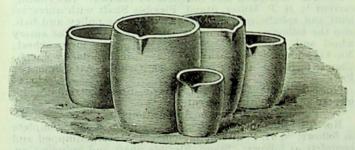


A good heavy Torch, and produces a large flame. It is intended to be used for all kinds of heavy indoor work, tempering small tools, etc.

### TURNER TORCHES.



# GRAPHITE CRUCIBLES.

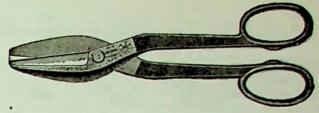


To be used in melting Babbitt Metal, etc.

New crucibles should not be exposed to a hot fire without first being annealed. In annealing a crucible, it should be placed in the furnace upside down, in order that the thicker part of the crucible, i. e., the bottom, be farther away from the heat. After a time, the crucible can be turned right-side up, and the heat gradually raised to red. No. 6. Height, outside, 6½ inches; top diameter, outside, 5½ inches:

078 menes.
Price, each
No. 10. Height, outside, 81/4 inches; top diameter, outside,
6¼ inches:
Price, each3003 \$2.40
No. 20. Height, outside, 10% inches; top diameter, out-
side, 81/4 inches; capacity in melted metal, 60 pounds:
Price, each
No. 30. Height, outside, 11% inches; top diameter, outside,
09/ total and the terminal motel 00 nounder

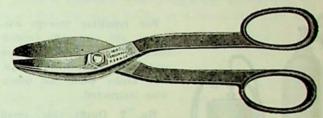
 TINNERS' STRAIGHT HAND SHEARS OR SNIPS.



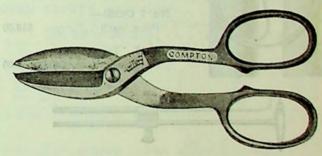
All Snips are forged from the best Norway iron, steel laid, and fully warranted.

No. 8. Hand cut, 31/2 inches; entire length, 141/4 inches: Price, each. 2101 \$2.00

# TINNERS' CIRCULAR HAND SHEARS OR SNIPS.



# RELIANCE HANDY TINNERS' SNIPS.



This Snip is adapted for Cornice Makers and all-around cutting, circular, straight and irregular shapes.

# TINNERS' RIVET SETS.



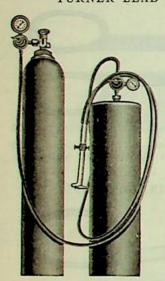
Made of warranted steel, drop forged and oil tempered.

	For Iron	For Copper				
	Rivets,	Rivets,	Length,	Price,	Price,	
No.	Pounds.	Pounds.	Inches.	per doz.	Each.	
00	14		51/2	\$9.00	\$0.90	
0	12 & 10	5	51/2	9.00	.90	
1	8	6	5	7.56	.80	
2	6	7	5	7-56	.80	
3	5 & 4	8	41/2	6.00	.60	
4	3 & 21/2	9	41/2	6.00	.60	
5	2 & 1%	10 & 11	41/4	4.44	.40	
6	11/2	12	41/4	4.44	.50	
7	11/4	13	41/4	3.84	.40	
8	12 & 10 oz.	14	41/4	3.84	.40	
		301 P. C.	Date			

### SOD-TOR-LITE TORCHES.



# TURNER LEAD BURNING OUTFITS.



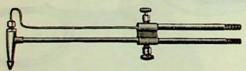
For repairing storage batteries, etc., we will furnish connections for Linde oxygen and small Prest-O-Lite acetylene tanks, when not otherwise instructed.

No. 7 Outfit—One small torch capable of producing a needle point flame. One oxygen regulator with service gauge. Two lengths of hose, each 61/4 feet long.

No. 7 Outfit-

Price, each....14401 \$18.00

No. 17. Torch only— Price, each..... 4806 6.00



HASKINS GRINDER EQUIPMENT.



SIOUX FLEXIBLE SHAFTS AND ATTACHMENTS.

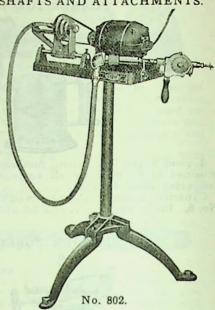
Valve Grinding — Emery wheel grinding.

Drilling—You can use it to drill small holes in places inaccessible with any other tool.

Reaming—A taper reamer can be used to enlarge the holes

Polishing—A wire brush can be attached to clean off carbon or to clean automobile bodies before painting.

For Tire Repair Shops — The Sioux Flexible Shaft is very handy in tire buffing work.



Uses Any Power.

This shaft can be driven directly by a motor, or from a lathe, drill press, line shaft or emery wheel stand or other power that will drive the shaft at a speed of 1,000 to 1,725 R. P. M., as well as by an electric or pneumatic drill of ½ inch capacity or more.

If you have a motor, specify speed of motor and size of shaft so that we can supply correct pulley. Price of pulley

on application.

The Sioux Flexible Shaft Comes Complete as Follows:
No. 800—Equipped and complete as follows: Stand, Valve
Grinder Attachment, Flexible Shaft with universal joint
and spindle control and bracket for drill; large pulley wheel;
three speed drive pulley and belt.

Price ......\$100.00

No. 801—Complete as above except Valve Grinding Attachment.

No. 803—Same as No. 802, except direct current Motor

instead of alternating current.

Price on Application.

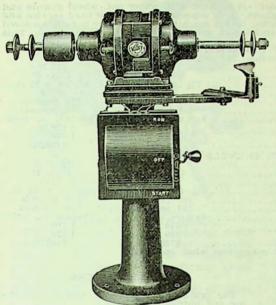
No. 804—For Tire Repair Shops; equipped and complete as follows: ¼ H. P. alternating current Motor, equipped and complete as follows: Stand, Flexible Shaft and Spindle Control, three speed drive pulley and belt, two arbors, one 4-inch wire brush, one 4-inch emery wheel.

No. 805—Same as No. 804, except direct current Motor. Price on Application.

No. 809—1/4 H. P. alternating current, 110 volt, 60 cycle 1,725 R. P. M. Motor, complete with plug, cord, switch and enclosed end plates, and three speed pulley, same as used in No. 802. This motor will work equally as well on either 50 or 60 cycle current.

Price \$40.00

No. 810—Complete as above, except direct current, same motor as in No. 803.



# Equipped With Pulley. Removable Tool Rest and Safety Switch.

# VALLEY BUFFERS AND GRINDERS.

The motor is totally enclosed and dust-proof. The bearings are high grade ball bearings which only require occasionally a few drops of oil. The bearings, shaft and motor have ample strength for the roughest kind of service. Each size machine has a double shaft extension threaded on both sides. On both ends are flanges and nut for holding the wheel or the wire brush. Motor is mounted on a heavy cast iron pedestal eliminating all vibration. Mounted on the pedestal is an approved safety type switch completely wired to the buffer so that it is only necessary for the electrician to string the wires to the machine and the buffer is ready to run.

At a slight increase in price a tool rest, guards and a pulley may be furnished. The pulley is furnished with a wide flat face so that an air compressor with a tight and loose pulley or a small line shaft may be operated.

The whole outfit is finished in black enamel with aluminum trimming.

and Safety Switch.					
DIMENSION IN INCHES	31S	41S	42S	51S	528
Length of shaft over all. Shaft extension. Each end. Length of arbor. Diameter of arbor. Distance, center of shaft to base of motor. Height of stand. Floor Space Shipping weight, buffer and stand.	25 12 in. 614 in. 314 in. 34 in. 518 in. 30 in. 14 in. Diam. 130 lbs.	32½ in. 8½ in. 4 in. 1 in. 5½ in. 30 in. 14 in. Diam. 250 lbs.	33 1/8 in. 8 1/2 in. 4 in. 1 in. 5 1/2 in. 30 in. 14 in. Diam. 275 lbs.	33½ in. 8½ in. 4 in. 1 in. 6¾ in. 30 in. 14 in. Diam. 300 lbs.	34 k in. 8 ½ in. 4 in. 1 in. 6 % in. 30 in. 14 in. Diam. 330 lbs.

# PRICES COMPLETE WITH ENCLOSED SAFETY SWITCHES.

Price

60	Cycl	e-Sin	gle Pl	nase—60	Cycle.
110 o	r 220	Volts	(Not	Intercha	angeable).

RPM

Stand

110.	220 or	440	Volts (Not	Interchangea	changeable).		
rame	H.	P.	RPM	Stand	Price		
. 31-S	1		1800	High	\$ 84.00		
. 41-5	11/		1800	High	95.00		
40 0	0		1000	Llimb	100 00		

60 Cycle-2 or 3 Phase-60 Cycle.

=	TT			wa will be	furnished to	operate	from 50	60 and 40	ovoles ourrent	at the con	na price per
	No. 52-S	2'2	1800	High	120.00		No. 52-S	4	1800	High	120.00
	No. 51-S	116	1800	High	112.00		No. 51-S	3	1800	High	112.00
	No. 42-S	1	1800	High	106.00		No. 42-S	2	1800	High	106.00
	No. 41-S	37	1800	High	95.00		No. 41-S	11/2	1800	High	95.00
	No. 31-5	1/0	1800	Filleri	. 04.00		140. 31-3		1000	THEI	\$ 04.00

Higher speed buffers and grinders will be furnished to operate from 50, 60 and 40 cycles current at the same price per horsepower as above listed.

No wheels or brushes included in the price.

Frame

Ex

	S						
A	dd fo	or tool	rest			 each	\$5.00
			ds 31, 4				
A	d for	guard	s 51 and	52 fran	nes	 	7.00
			v				

Note-When ordering be sure to specify:

1. Voltage.

F

2. Frequency.

3. Phase.

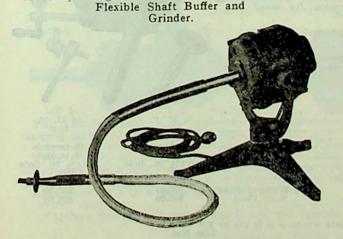
4. H. P.

5. R. P. M. (or speed).

# FLEXIBLE SHAFT GRINDERS.

The motor is a full ¼ h, p. ball-bearing motor mounted on a ball-bearing swivel and trunnion that acts as a rugged universal joint which allows the motor to move freely in all directions. Fastened to the motor is a flexible shaft to which may be attached different classes of wheels. Due to the universal motion of the motor the flexible shaft may be short and operate nearly straight at all times. This reduces the wear in the flexible shaft to a minimum and eliminates the ordinary shaft

trouble. The outfit is a high grade product. It is furnished with a flexible cord and plug and may be attached to the ordinary lamp socket.

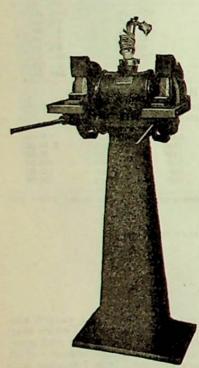


#### FLEXIBLE SHAFT GRINDERS.

H. P.	Volt 110 or 220	Cycle	Phase 1 or 3	Price \$69.00	Net Weight 60	Shipping Weight 80	Bench Space 14 in.
16 14	110 or 220 110 or 220 110 or 220	60	1 or 3 Current	85.00 74.00	80 65	100 65	14 in. 14 in.

List Net.

PEDESTAL GRINDER.



PEDESTAL GRINDERS WITH WET GRINDING ATTACH-MENT.

Our Pedestal and Bench Grinders can all be fitted with wet grinding attachment when ever wanted. Our web grinding attachment is the most improved and represents the very best construction for this kind of work. The use of water with emery wheels in grinding fine tools and many classes of work is very essential and greatly increases the value and efficiency of the electric grinders. The extra charge for this attachment is of no importance considered with its value. Write us for further particulars.

# STANDARD PORTABLE ELECTRIC GRINDERS.

Illustration shows Pedestal or Floor Grinder. It is fitted with water pot, wheel guards and tool rests. This grinder is ball bearing throughout. It is especially adapted to hard service and is built for constant use. It is rapidly supplanting belted machines. The motor is fully enclosed and is dirt and dust proof. Ball bearings are encased in grease in dust-proof chambers. This grinder can also be used for buffing.

DIRECT CURRENT.

DIRECT CORREIT.	
Lamp socket connection, 110 or 220 volts.	
TYPE 6 F	12 F
Capacity	1 H. P.
Mater Dimensions	81/2 in. x 21 in.
Motor Dimensions	
Speed	2000
Net Weight	205 pounds
Gross Weight	280 pounds
Emery Wheel. 8x34x5g in, hole	10x1x% in, hole
	( 110
	220
220	
Price, each	\$130.00
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE.	
TYPE ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE.	12 F A*
TYPE ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE.	12 F A* 1 H. P.
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE.  6 F A  72 H, P.  Motor Dimensions. 3400	12 F A* 1 H. P. 1700
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE.  6 F A Capacity	12 F A* 1 H. P. 1700 8½ in. x 21 in.
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE. 6 F A Capacity	12 F A* 1 H. P. 1700
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE. 6 F A Capacity	12 F A* 1 H. P. 1700 8½ in. x 21 in.
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE. 6 F A Capacity	12 F A* 1 H. P. 1700 8½ in. x 21 in. 225 pounds
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12 F A* 1 H. P. 1700 8½ in. x 21 in. 225 pounds 290 pounds 10x1x¾ in. hole § 110
ALTERNATING CURRENT, 60 CYCLE SINGLE PHASE. 6 F A Capacity	12 F A* 1 H. P. 1700 8½ in. x 21 in. 225 pounds 290 pounds 10x1x¾ in. hole
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	12 F A* 1 H. P. 1700 8½ in. x 21 in. 225 pounds 290 pounds 10x1x¾ in. hole § 110



#### BENCH GRINDERS.

For grinding small tools, castings, polishing and buffing.

Emery wheel on each end, one coarse and one fine, or one emery and one buffing wheel.

Tool rests are detachable.

Ball Bearing

#### DIRECT CURRENT.

Lamp socket connection-110 or 220 volts.

TYPE	6 B	12 B .
Capacity	16 H. P.	1 H. P.
Dimensions		2000
Speed		7 in. x 18 in.
Net Weight	85 pounds	105 pounds
Gross Weight	120 pounds	150 pounds
Emery Wheel	6x34x56 in. hole	10x1x24 in. hole
Volts	§ 110	§ 110
	[ 220	220
Price, each	\$95.00	\$125.00
ALTERNATING CURRENT, 60 CYCL	E, SINGLE PHASE.	
TYPE 3 BA	6 BA	12 BA*
Capacity ¼ H. P.	1/4 H. P.	1 H. P.
Speed 3400	3400	1700
Dimensions 6 in. x 15 in.	7 in. x 16 in.	8 in. x 18 in.
Net Weight 50 pounds	95 pounds	130 pounds
Gross Weight 80 pounds	145 pounds	185 pounds
	8x%x% in. hole	10x1% in. hole
Volts	§ 110	110 220
220	220	\$130.00
Price, each \$65.00	\$100.00	\$130.00
Furnished for 2 and 3 phase power circuit connection		- New Property of the Party of
*Made for 2 or 3 phase only.		-

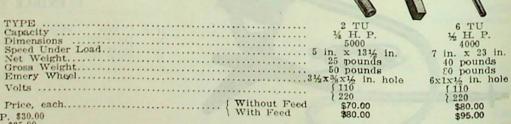
# UNIVERSAL TOOL POST GRINDERS.

These grinders operate on both direct and alternating current, being interchangeable on same voltage.

They are furnished with extension for small internal work and with tooth rest.

They are very effective for internal grinding where high speed is desirable.

Under light load speed is approximately 8,000. 110 or 220 Volts Lamp Socket Connection.

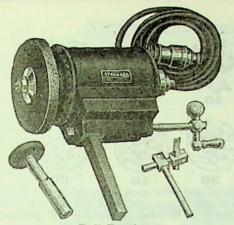


Wet Grinding Attachment ½ H. P. \$30.00 Wet Grinding Attachment 1 H. P. \$35.00

\*Always specify voltage on which you will operate electric tool. State whether it is 110 or 220 volts.

Goods marked (F) not carried in stock shipment from factory.

List Nat.



Ball Bearing.
TOOL POST GRINDERS.

For lathe and milling machine work grinding centers, reamers, dies and rolls, Also for surface work on shaper and planer. Furnished with internal grinding attachment and tooth rest.

Angle Plate Furnished Instead of Slide, when wanted.

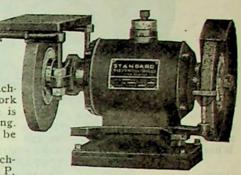
# STANDARD ELECTRIC GRINDERS.

# SURFACE ATTACHMENT.

Illustration shows our surface attachment. This is very useful when work should be ground straight. The table is adjustable for light or heavy grinding. It is detachable and both wheels can be used for general work if desired.

We furnish Surface Grinding attachment for either end on any ½ and 1 H. P. sizes, Bench or Pedestal Grinders.

In ordering mention type of Pedestal or Bench Grinder, adding with Surface Attachment, stating whether to be on right or left end of motor. Regularly mounted on right end.



GRINDER With Surface Attachment

Willett.	maneca.		mounteed	011 11811
ALTERNATING	CURRENT,	60 CYCLE,	SINGLE	PHASE

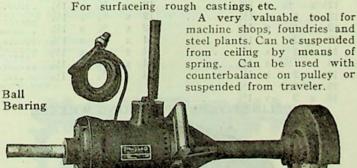
TYPE	2 TA	3 TA	6 TA
Capacity	1/6 H. P.	¼ H. P.	½ H. P.
Speed	3400	3400	3400
Dimensions	5 in. x 10½ in.	6% in. x 12 in.	7 in. x 14 in.
Net weight	24 pounds	35 pounds	45 pounds
Gross Weight.	50 pounds	65 pounds	90 pounds
Emery Wheel.	5x3/8x1/2-in. hole	6x½x5/8 in. hole	8x\% in. hole
Volts	§ 110	§ 110	§ 110
	220	220	220
Without Feed.		\$60.00	400.00
With Feed	60.00	70.00	95.00

Furnished for 2 and 3 phase power circuit connection when specified.

# DIRECT CURRENT TOOL POST GRINDERS.

Lamp Socket Con	nection—110 of 2	20 VOILS.
TYPE	3 T	6 T
Capacity	1/4 H. P.	½ H. P.
Speed	4000	2600
Dimensions	5 in. x 10½ in.	6 in. x 14 in.
Net Weight	24 pounds	41 pounds
Gross Weight	50 pounds	85 pounds
Emery Wheel	5x\%x\\\/2-in. hole	8x3/4x5/s-in. hole
Volta	§ 110	§ 110
Volts	220	220
Without Feed	\$55.00	\$85.00
With Feed	65.00	95.00

UNIVERSAL AERIAL GRINDERS.
For surfaceing rough castings, etc.



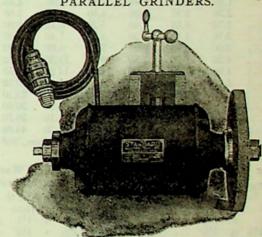
This Grinder operates on both direct and alternating current, 60 cycles, or less, 110 or 220 volts. Specially adapted for use in corners and close places. Lamp socket connection.

use in corners and close places. Lamp socket connection.

Type, 6 AU; capacity, ½ H. P.; speed under load, 4000; dimensions, 7 in. x 24 in.; net weight, 35 lbs.; gross weight, 70 lbs.; emery wheel, 6 in. x 1 in. x 5/8 in. hole; volts, 110, 220.

Lamp Socket Connection-110 or 220 Volts. 12 P TYPE..... 6PA ½ H. P. 2600 Capacity..... 1 H. P. 2000 Speed..... 10 in. x 15 in. Dimensions..... 7½ in. x 15 in. Net Weight..... 60 pounds 80 pounds 140 pounds 10x1x1/4 in. hole Gross Weight.... 130 pounds Emery Wheel..... 8x3/4x5/s in. hole { 110 220 \$125.00

PARALLEL GRINDERS.



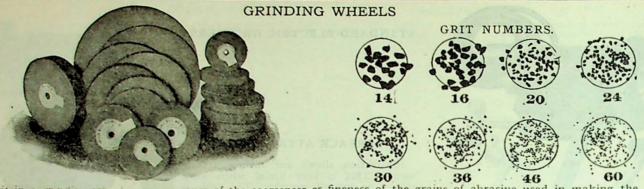
Ball Bearing.

Furnished with angle plate for bolting on compound rest of lathe. Specially adapted for grinding rolls, journals, crankshafts, etc., in lathe or surface grinding in planer or boring mill. Vertical adjustment, 4 in.

# ALTERNATING CURRENT, 60 CYCLE SINGLE

	PHASE.								
TYPE	6 P A	12 P A*							
Capacity	½ H. P.	1 H. P.							
Speed	3400	1700							
Dimensions	71/2 in. x 15 in.	10 in. x 15 in.							
Net Weight	70 pounds	80 pounds							
	100 pounds	150 pounds							
Emery Wheel	Sx34x56-in. hole	10x1x3/4 in. hole							
Volta	(110	§ 110							
VOILS	220	220							
Price, each	\$100.00	\$140.00							
Furnished for 2 and	3 phase power	circuit connection							
when specified. "Made i	for 2 or 3 phase	only.							
DIRECT CURRENT.									
Net Weight. Gross Weight. Emery Wheel. Volts. Price, each. Furnished for 2 and when specified. *Made is	70 pounds 100 pounds \$x\frac{3}{4}x\frac{5}{5}\text{-in. hole} \frac{110}{220} \\$100.00 3 phase power for 2 or 3 phase	80 pounds 150 pounds 10x1x¾ in. hole { 110 } 220 \$140.00 circuit connection only.							

List Net. (F) Goods marked (F) not carried in stock, shipment from factory.



Grit in a grinding wheel is the measure of the coarseness or fineness of the grains of abrasive used in making the wheel. Grit means the size of the grains as they actually were before they were put into the wheel, and not what they may appear to be in the wheel. The grit of a wheel only approximately indicates the degree of fineness of finish it will produce. Wheels generally appear finer than emery paper made from the same number grit.

PRICE LIST—STRAIGHT WHEELS.												
Diam-			Th	nickness	of Wh	eels in	Inches.					
eter.	1/4	1/2	3/4	1	11/4	11/2.	13/4	2	21/4	21/2		
1	\$ .40	\$ .50	\$ .60	\$ .70	\$ .80	\$ .95	\$1.05	\$1.15	\$1.25	\$1.35		
2	.60	.75	.90	1.00	1.15	1.30	1.45	1.60	1.75	1.85		
3		1.00	1.20	1.45	1.65	1.85	2.10	2.30	2.50	2.70		
4		1.40	1.65	1.95	2.25	2.55	2.80	3.10	3.40	3.70		
5		1.90	2.25	2.65	3.00	3.40	3.80	4.15	4.55	4.90		
6	1.90	2.40	2.90	3.40	3.90	4.45	4.95	5.40	5.95	6.50		
7	2.30	2.95	3.60	4.30	4.95	5.60	6.30	6.90	7.55 .	8.20		
8		3.55	4.40	5.20	6.10	6.90	7.80	8.60	9.45	10.30		
9		4.15	5.20	6.30	7.40	8.40	9.50	10.60	11.65	12.70		
10		4.90	6.20	7.50	8.90	10.20	11.50	12.80	14.10	15.40		
12		6.00	7.80	9.50	11.30	13.10	14.90	16.70	18.45	20.20		
14		7.20	9.60	11.90	14.20	16.50	18.90	21.20	23.50	25 80		
16		8.70	11.60	14.60	17.60	20.50	23.50	26.50	29.45	32.40		
18		10.30	14.00	17.70	21.40	25.10	28.80	32.50	36.15	39.80		
20		12.30	16.80	21.40	25.90	30.50	35.00	39.60	44.15	48.70		
22			20.10	25.60	31.10	36.70	42.20	47.70	53.35	59.00		
24			24.00	30.60	37.30	44.00	51.00	59.00	65.00	71.00		
Carbide of								coder o		Tools.		
Carride or		,		, .	or and ar	., 000		Dien	a Width			

# CARBORUNDUM WHEELS.

Carborundum is very much harder than any other known abrasive, which gives it durability. It is made up of small, sharp crystals, that are just brittle enough to break slightly in use. The sharp edges of the crystals cut clean and fast, while the brittleness, by constantly presenting fresh cutting edges, prevents glazing.

In ordering, specify for what use they are intended.

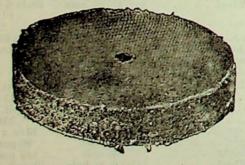
List same as Grinding Wheels.

307 P. C.

	F	or G	en	eral U	Ise.	For Rough Work.						
Dia	m.	Widt	h	Hole			Cas	st Iro	n,	Malle	eable;	
6	X	3/4	X	1		Forgings, Etc.						
6	X	1	X	1		Dia	m.	Widt	h	Hole		
S	X	1	X	11/4		10	X	1	X	11/4		
8	X	11/2	X	11/4		10	X	11/2	X	11/4		
10	X	1	X	11/4		10	X	2	X	11/4		
10	X	11/2	X	11/4		12	X	11/2	x	11/4		
10	X	2	X	11/4		12	x	2	x	11/4		
12	X	1	X	11/4		12	X	2	x	11/4		
12	x	11/2	X	11/4		14	X	11/2	x	11/2		
12	X	2	X	11/4		14	x	2	x	11/2		
14	x	1	X	11/2		16	X	11/2	X	11/2		
14	x	11/2	x	11/2		16	x	2	x	11/2		
14	x	2	X	11/2		18	x	2	x	11/2		
16	X	11/2	x	11/2								
16	X	2	x	11/2								

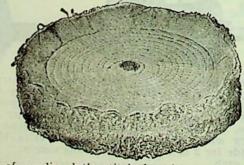
For Tools.								I	or	Saws	s, R	ound	Face.
Dia	ım.	Widt	h	Hole				Dia	ım.	Widt	h	Hole	
5	X	3/8	X	3/4				6	X	1/4	X	1	
5	X	1/2	X	3/4				6	X	3/8	X	1	
5	x	3/4	X	3/4				6	X	1/2	X	1	
6	x	3/8	x	3/4				8	x	1/4	X	11/4	
6	x	1/2	x	1				8	x	3/8	x	11/4	
6	X	3/4	X	1	1.20			8	x	1/2	X	11/4	
6	x	1	X	1	1 2 2 2			8	x	5/8	X	11/4	all the said to
8	X	1/2	X	11/4	00000			10	X	1/4	X	11/4	
8	X	5/8	X	11/4	0.00			10	X	3/8	X	11/4	
8	X	3/4	X	11/4	1111111111			10	X	1/2	X	11/4	
8		1				70.00		10					
	X		X	11/4					X	5/8	X	11/4	
10	X	1/2	X	11/4				10	X	3/4	X	11/4	
10	X	3/4	X	11/4	.00			12	X	1/4	. X	11/4	
10	X	1	X	11/4				12	X	3/8	X	11/4	
12	X	3/4	X	11/4				12	X	1/2	X	11/4	
12	X	1	X	11/4				12	X	5/8	X	11/4	
12	x	11/2	x	11/4				12	x	3/4	x	11/4	
12	X	2	x	11/4				14	x	3/8	x	11/2	
14	x	1	x	11/2				14	x	1/2	X	11/2	
14	x	11/2	x	11/2				14	x	5/8	X	11/2	
14	x	2	x	11/2	1			14	x	3/4	x	11/2	
16	X	11/2	X	11/2	Jane .				^	/4	^	1/2	
16	X	2	X	11/2									
10	^			N-ST	TTC	UFF	DC	TT	TIT	NC	117 T	TEET	C
		141 0 5	וענ	14.21	110.	HEL	PU	LIS	211	NG	WI	HEEL	5.

# CANVAS-STITCHED POLISHING WHEELS.



Made of heavy canvas duck, put together with water-proof cement. When used with No. 20 to 60 emery, it makes an excellent polisher and fast-cutting wheel.

Diameter 10 inches; 2 inches thick. Price, each......\$3.25 Diameter 12 inches; 2 inches thick. Price, each...... 4.50 List Plus 203 P. C.



Made of muslin cloth, stitched and cemented to within one to three inches of edge. Surface is very soft and yielding, suitable for polishing plowshares and uneven surfaces. Diameter 10 inches; 2 inches thick. Price, each...2501 \$2.10

CRESCENT EMERY GRINDERS



No. 8-A.

No. 9.

...\$11.00

5.50

List Net.

Carefull	ly Made,	with Tight	and Loose	Pulley on	Shaft.
Carries two	wheels.				.1x8 in.
Spindle					
Diameter of	Spindle	between Fla	anges		. % in.
Bearings					2 × 2 in
Weight					
Price, each.					.\$8.00
Guard extra					. 4.00



Spindle Is Large and Carefully Turned Perfectly Round, and Accurately Fitted to the Boxes.

Carries two wheels	116x10 in.
Spindle	
Diameter of Spindle between Flanges	
Bearings	.4 in.
Pulley	.234 x21/2 in.
Diameter of Flanges	3 in
Distance between wheels	19 1
Weight	40 lbs.
No. 9 Grinder requires No. 2 Countershaft.	
Price, each	.\$9.50
Guard extra	5.50
No. 9-A. A Well-Made Emery Stand with Tight	and Loose
Pulley.	
Carries two wheels	116×10 in
Carries two wheels	large in
Spindle	. 1X24 III.
Diameter of Spindle between Flanges	
Bearings	.4 in.
Pulley	23/x21/6 in.
Diameter of Flanges	
Weight	

Price ..... Guard extra

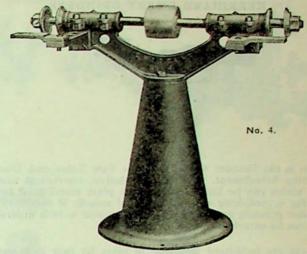


Has I arge and Carefully Turned Spindle

That Large and Carerany Tarried Opinion	
Carries two wheels	.2x12 in.
Spindle	. 1 16 x24 in.
Diameter of Spindlo between Flanges	
Bearings	.51/2 in.
Pulley	.3½x3 in.
Diameter of Flanges	.3½ in.
Distance between wheels	.14½ in.
Weight	.60 lbs.
No. 10 Grinder requires No. 11/2 Countershaft.	
Price, each	.\$13.00
Guard extra	. 7.00



	140	. 10-	м.	AAIFU	rigin	anu	Loose	runeys,	To E
Carries	two	whee	els						2x12 in.
Spindle									1 % x27 in.
Diamete	r of	Spine	dle b	etwe	en Fla	nges			1 in.
Bearing	8								51/2 in.
Pulley									3½x3 in.
Diamete	r of	Flan	ges.						31/2 in.
Weight									70 lbs.
Price									\$15.00
Guard e	xtra.								7.00
D D									

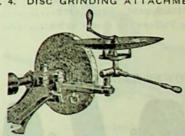


This grinder is of the latest and most improved design. The extra long spindle and the shape of the frame adapts it for grinding irregular shapes and large pieces.

Special attention is called to the extra long bearings, which tend to prevent wear and spring of arbor and insure steady and true running. Bearings are adjustable, babbitted and faced, also provided with means for oiling. Four bolts on each bearing hold the boxes firmly in place and in line. Specifications

Carries two wheels	
Spindle	
Diameter of Spindle between Flanges	11/4 in.
Length of Bearings	
Diameter of Flanges	435 in.
Pulley	
Distance between wheels	30 in.
Distance from floor to center of Spindle	30 in.
Size of Base	19 in.
Weight	200 lbs.
No. 4 Grinder requires No. 1 Countershaft.	
No. 4. Price, each	\$32.00
Guards each, extra	

NO. 4. DISC GRINDING ATTACHMENT.



The above attachment used on the No. 4 grinder and will be found serviceable in sharpening discs or coulters up to 36 inches in diameter. By raising the long handle the disc is brought into contact with the emery wheel and the short handle on top is used to rotate the disc while grinding.

All bearings are machine turned thus assuring accurate and perfect work.

 Weight
 15 lbs.

 Packed one in a box.
 6x6x16 in.

 Price, each.
 \$6.50

 Weight Price, each.....

CRESCENT SAW GUMMERS.



Dimensions.
Carries one wheel
Spindle
Diameter of Spindle between Flanges in.
Diameter of Flanges3 in.
Bearings
Pulley4x2 in.
Weight25 lbs.
Requires No. 2 Countershaft,
Vo 6 Saw Gummer, Price each \$6.00

# (F) KERRIHARD EMERY GRINDERS.



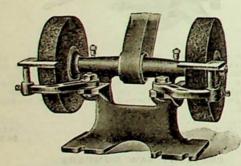
This is the Grinder with its unique Saw Table and Disc Grinding Attachment. A solid, substantial, convenient saw table which can be laid aside and the plain stand used for grinding or polishing on both ends of spindle if necessary. The disc grinding attachment is indispensable in rush orders, as it can be attached or detached quickly.

Boxes are babbitted and held in place by four lock nutbolts in each box, fitted with special spring top oilers. Rest will fit either on the face or side of wheel. Will carry wheels 18 in. in diameter, 3 in. thick, 11/4-in. hole.

Arbor to floor, 28 inches; diameter of base, 18 inches; length of arbor, 42 inches; diameter of arbor between washers, 1¼ inches; diameter of washers, 4¼ inches; size of bearings: length 6 inches, diameter 1½ inches; size of pulley, diameter face, 4 inches; distance between wheels, 32 inches; size of table, 24x27x1¼ inches; weight, 240 lbs.; weight of stand only, 175 lbs.

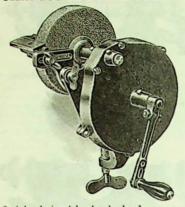
Regular Emery Grinder only. Price, each\$36.00
Regular Emery Grinder with Saw Table. Price, each 53.60
Saw Table Attachment only. Price, each 20.00
Rests for above. Price, each
Guards for 12-in wheels. Price, each 9.00
Guards for 14-in, wheels. Price, each
Disc Grinding Attachment. Price, each 14.00
Tight and Loose Pulleys for above extra 8.00
act B C

## POWER BENCH GRINDERS.



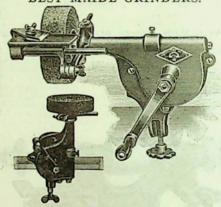
List Net.

# MECHANICS' SPECIAL GRINDERS.



Extra well finished in black, baked enamel, with nickelplated trimmings. The wheels are of medium grit and made of silicon carbide, or "Carborundum." Arbor holes in wheels are all one-inch.

# BEST MAIDE GRINDERS.



#### CHALLENGE GRINDERS.



Cut gears, steel pinions, broad bases.

Gearing fully enclosed. Finished in black, baked enamel.

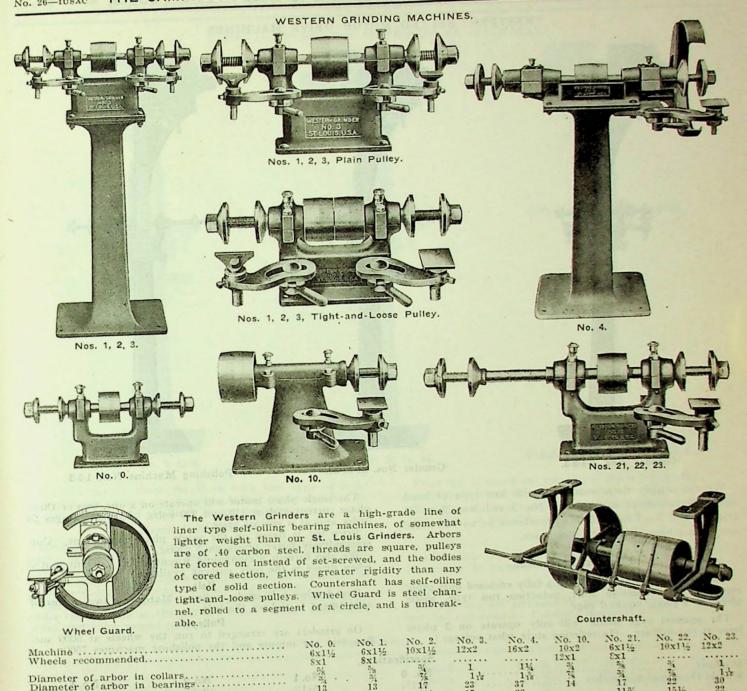
No. 94. 4x1-in. wheel, tool rest. Weight, packed, 6 pounds. Price, each. \$4.50

No. 95. 5x1-in. wheel, tool rest. Weight, packed, 8 pounds. Price, each. 5.50

No. 96. 6x1-in. wheel, tool rest. Weight, packed, 11 pounds. Price, each. 7.50

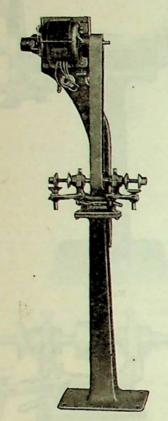
List Net.

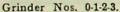
(F) Goods marked (F) not carried in stock, shipment from factory.

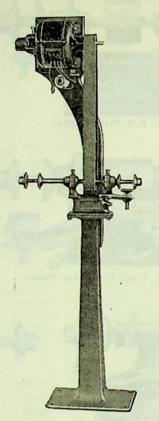


able.						Cou	ntershaft.		4 100
Wheel Guard.			and the	11.00	150.11	N- 10	No. 21.	No. 22.	No. 23.
Machine	No. 0.	No. 1.	No. 2.	No. 3. 12x2	No. 4. 16x2	No. 10. 10x2	6x11/2	10x114	12x2
Machine	6x1½	6x11/2	10x11/2		10.72	12x1	Ex1		
Wheels recommended	Sx1	8x1	34	1	134		5/8 3/4	34	1
Diameter of arbor in collars	1.013%	. %	7/8	115	1,5	34 34	3/4	76.	112
	13	13	17	23	37	14	17	22 1536	30 22
	734	734	101/2	15	28		1134	10 52	3
	136	11/2	2	3	3514	3	11/2	ā	9
	416	41/6	6	41	36	40	39	40	41
Length of bearings Height to center of arbor Height from floor to center of arbor		39	40 4xS	6x1014		6×1014	3x6	4x8	6x1014
	3x6	3x6	3x2	4x3	4x4	4x236	21/2×11/2	3x2	4x3
	21/4×11/4	21/2 x11/2 21/2 x11/2	3x2	4x3	4×4	4x23/2	2½x1½	3x2	4x3
	21/2×11/2 498	498	478	531	398	531	498	478	531 12x3
	12x11/4	12x13/6	12x2	12x3	12x4	12x21/2	12x1½ 4x2	12x2 4x2 <sup>1</sup> / <sub>2</sub>	6x3
	4x2	4x2	4x21/2	6x3	6x4	4x3	432	6	6
	6	6_	6	24x112	30x1 %	24x11/2	18x76	22x11	24x118
Drop of Countersnatt	18x 78	18x 3/8	22x11 25	45	90	25	18	27	47
	12	16 45	65	95	105	95	45	65	95
Weight of Head. Weight of Column.	45 35	35	45	55	85	55	35	45	55
Weight of Countershaft	99				-		98	137	197
	92	96	135	195	280	175	30	100	
Weight, Complete	TINGS II			\$20.00	\$40.00	\$10.00	\$13.00	\$17.00	\$24.00
20 alf	\$ 8.50	\$10.00	\$14.00 13.00	17.00	\$10.00	17 00	10.00	13.00	17.00
Column	10.00	10.00	11.00	14.00	20.00	11.00	8.50	11.00	14.00
	8.50 27.00	28.50	38.00	51.00	60.00	38.00	31.50	41.00	55.00
	3.00	3.00	4.00	4.00	6.00	4.00	3.00	4.00	
Extra T. & L. Pulley on Head Open Type	7.00	7.00	10.00	11.00	17.00	These sizes price of pai	take one s	1. 2. 3. re	spectively.
Extra for Wheel Guards, per pan, open		,							*******
Specials: Wheel Guards	6.50		10.00						
8-inch Wheel Guards	8.50	8.50	10.00						
8-inch wheel craft as	200		na on No	4. N	o. 4 Res	t Bracket	and Rest,	each, \$4	1.00.

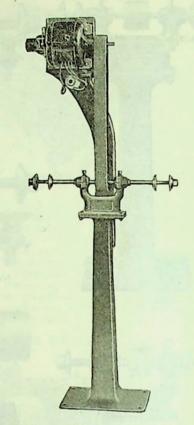
### "WESTERN" BELTED MOTOR DRIVE MACHINES.







Grinder Nos. 21-22-23.



Polishing Machine Nos. 1-2-3.

We can supply these machines with any type of head shown in catalog from No. 0 to No. 3 and No. 21 to 23 grinders and No. 1 to 3 polishing machines, or we can make special machines for special purposes.

# Electrical Equipment.

We have selected as a standard a fully enclosed dust proof motor of the repulsion start, induction run type, single phase or 3 phase squirrel cage.

The squirrel cage motor will only operate on 3 phase lines at one voltage. (In ordering state what voltage.)

Length of arbor, inches.....

The single phase motor will operate on a one, two or three phase current and at 110 and 220 volts. (Other voltages to order and at a special price.)

Price list is based on the single phase equipment. Cor-

respondingly lower prices on 3 phase.

We also furnish a compound wound direct current motor when direct is the only current available.

Best leather belt made endless. Motor has two inches of adjustment to tighten the belt.

# Pulleys.

On grinders are arranged to run the wheels at 5000 surface feet per minute and the polishing machines 7500:

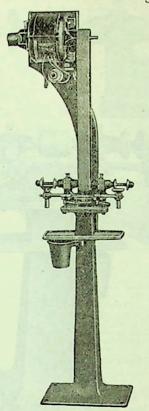
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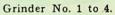
mies at one voltage. An ordering state what volt	a Berry	race reet per minute a	nd the polishing i	nacimies 1000.
	Specification	ons.		
Machine	No. 0	No. 1	No. 2	No. 3
Wheels recommended, inches	6x1½	6x1½	10x1½	12x2
	8x1	8x1		
Diameter of arbor in collars, inches	5/8	5/8	3/4	1
Diameter of arbor in bearings, inches	3/4	5/8 3/4	7/8	116
Length of arbor, inches	13	13	17	24
Distance between wheels, inches	73/4	73/4	101/2	15
Height to center of arbor, inches	41/2	41/2	6	9
Weight complete, stationary type	150	155	200	275
Weight complete, portable type	170	175	190	250
Stationary Column, with Grinder Head	\$150.00	\$155.00	\$180.00	\$275.00
Stationary Column, with Polisher Head		155.00	181.00	276.00
Portable Stand, with Grinder Head	160.00	165.00	190.00	285.00
Portable Stand, with Polisher Head		165.00	191.00	286.00
Nos. 21 to 23 take same specifications as Nos.	1 to 3 except le	ength of arbor, which i	s given below:	
Machine	No. 21	No. 22	No. 23	
Length of arbor, inches	17	22	30	
Stationary Column Grinder Head	\$158.00	\$183.00	\$279.00	
Portable Stand with Grinder Head	168.00	193.00	289.00	
Nos. 1 to 3 Polishing Machines have same spe which is given below:		rresponding number of	grinder except th	ie length of arbor
Machine	No. 1	No. 2	No. 3	

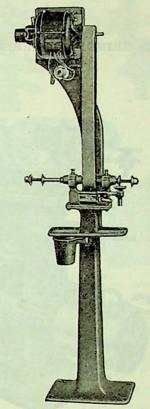
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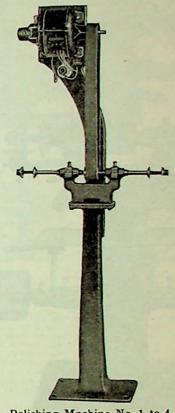
# SAINT LOUIS BELTED MOTOR DRIVE MACHINES.







Grinder No. 21 to 24.



Polishing Machine No. 1 to 4.

We can supply these machines with any type of head shown in our catalog up to and including No. 4 and No. 24, or can make special machines for special purposes.

# Electrical Equipment.

We have selected as a standard a fully enclosed dust-proof motor of the repulsion start, induction run type, single phase or 3 phase squirrel cage.

The squirrel cage motor will only operate on 3 phase lines at one voltage. (In ordering state what voltage.)

The single phase motor will operate on a one, two or three phase current and at 110 and 220 volts. (Other voltages to order and at a special price.)

Price list is based on the single phase equipment. Correspondingly lower prices on 3 phase.

We also furnish a compound wound direct current motor when direct is the only current available.

#### Belt.

Best leather belt made endless. Motor has two inches of adjustment to tighten the belt.

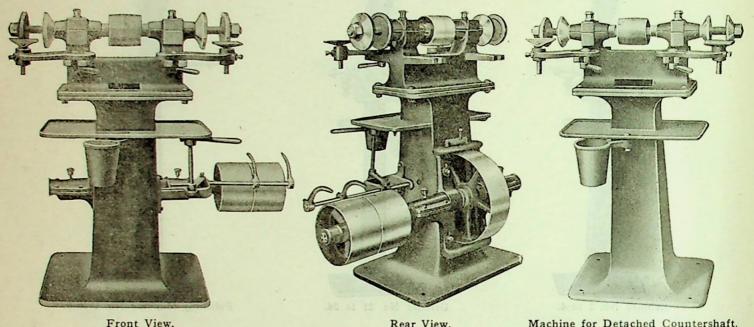
#### Pulleys.

On grinders are arranged to run the wheels at 5,000 surface feet per minute. Polishing machines 7,500.

#### Specifications

Specifications.							
Machine	No. 1	No. 2.	No. 3	No. 4			
Wheels recommended, inches	6x1½	8x11/2	10x2	12x2			
Diameter of arbor in collars, inches	5/8	3/4	7/s	1			
Diameter of arbor in bearings, inches	3/4	7/8	118	1 13			
Length of arbor, inches	17	20	22	26			
Distance between wheels, inches	103/4	12	141/2	18			
Length of bearings, inches	3	31/2	41/4	13/.			
Height to center of arbor, inches	41/2	51/2	61/2	71/2			
Weight complete, stationary type	160	210	280	345			
Weight complete, portable type	180	200	255	290			
Nos. 21 to 24 take same specifications as Nos. 1 to 4 except let Machine  Length of arbor, inches.  Price, each, stationary column with grinder head.  Price, each, Portable Stand, with Grinder Head.	No. 21 20 \$166.00 176.00	No. 22. 25 \$192 00 202.00	No. 23. 27 \$265 00 270.00	No. 24 34 \$298.00 \$303 00			
Nos. 1 to 4 Polishing Machines have same specifications as corres	ponding numb	er of grinder exc	ept the length o				
Machine	No. 1.	No. 2.	No. 3.	No. 4			
Length of arbor, inches	27	30	33	36			
Stationary Column, with grinder head	\$165.00	\$190.00	\$263.00	\$295.00			
Stationary Column, with Polisher head	163.00	188.00	261.00	292 00			
Portable Stand, with Grinder head	175.00	200.00	268.00	300.00			
Portable Stand, with Polisher head	173.00	198.00	266.00	297.00			

#### ST. LOUIS GRINDING MACHINES.



Rear View.

Self-Contained Countershaft Type.

Machine for Detached Countershaft.

Arbors are of .40 point carbon steel, thread two pitch coarser than standard.

Boxes are dust-proof, lined with high-grade anti-friction metal, provided with oil cellars and self-oiling. To order, can be lined with Randall Graphite, removable cast iron or bronze shell bearings.

Bodies and caps are milled so all side strain is taken off screws. Liners are eliminated.

Rests are of improved design, requiring shorter bracket than the straight type. Back rests are furnished for receiving wheel guard or other fixture.

Pan is five inches below base of machine, giving more room than usual, and eliminating the danger of material wedging between wheels and pan.

Finish. Bright parts are properly polished. Painted parts are filled, rubbed down to a flat surface, and painted with oil-proof paint.

#### Self-Contained Countershaft.

This type of countershaft affords several advantages over the detached type, where it is convenient to place the machine near the line shaft. One of the most apparent, is the avoidance of the necessity of attaching the counter to the ceiling and lining it up. Another, is that the belt is out of the way, often a great convenience in handling large work.

Most important advantage is the very smooth running of the wheels. The belt strain being down against the body of the machine, gives the wheels a smooth running motion, which it is impossible to get with this class of machine belted up.

Belt Tightening Device is very simple, and will keep belt at proper tension till worn out without cutting. It consists of the countershaft frame attached to column by accurately milled square gibs and adjusted by a screw, as shown.

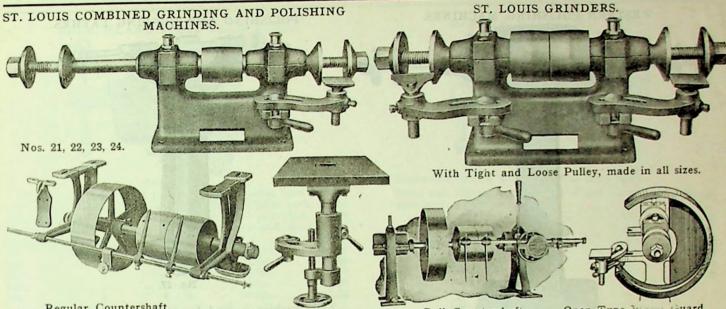
# Detached Countershaft.

The machine for Detached Countershaft is the same as the Self-Contained Type, except in the countershaft feature.

We furnish two types of Detached Countershaft, one of the ordinary shifter lever type, and one of the pull type.

To start, pull the cord; to stop, pull the cord.

All countershaft Tight and Loose Pulleys are self-oiling and dust-proof.



# Regular Countershaft.

The cut herewith shows a Surface Grinding Attachment, for use on Nos. 3 and 4 St. Louis Grinders.

It attaches to back rest in place of Wheel Guard at left end, or to front rest in place of rest arm at right end. It can be removed very quickly.

It has fine adjustment with hand wheel and screw.

Surface Attachment. Pull Countershaft. Open Type waser Guard.

Cut above illustrates the most effective open type guard that has ever been produced. It cons. . . a steel channel rolled to a segment of a circle. This is very stiff and unbreakable, and is further reinforced by a heavy cast iron bracket riveted to the inside flange of the channel.

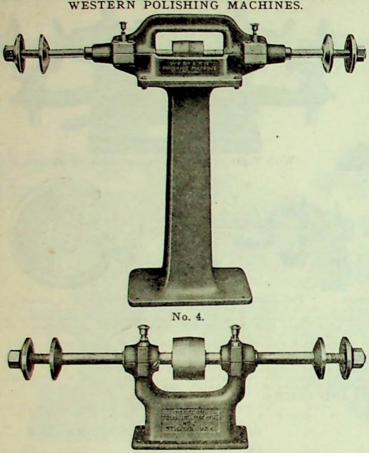
This bracket is attached to the back rest shown on the machine by a bolt which slides in the slot, allowing the guard to be adjusted backward as the wheel wears. The lips of the guard can be kept close to the wheel, where they are not in the operator's way, and eliminates danger of dropping material between the wheel and the guard.

This guard effectively prevents fragments from striking the operator, and, if the wheel should break, would strike inside the flanges of the channel, and be prevented from flying.

SPECIFICATIONS AND PRICES.

wheel and screw.	SI	nould break	ECIFICA	TIONS A	AND PRI	CES.				
		SP	ECIFICA	. No. 4	No. 5.	No. 6.	No. 21.	No. 22.	No. 23.	No. 24.
Machine	No. 1.	No. 2.	10 × 2	12 x 2	14 x 21/2	16 x 3	6 x 11/2	8 x 11/2	10 x 2	12 x 2
Wheels recommended, inches	6 X 1½	8 x 11/2	10 2 2	1	/-				~,	
Diam. of arbor in collars,	*/	2/	7/8	1	11/8	114	- 5/8	34	7/8	1
inches	58	-%	10						1.1	7.3
Diam, of arbor in bearings,		7/8	110	1 %	1,5	11/2	34	78	22	27
inches		1914	22	27	30	34	16	191/2		
Length of arbor, inches		10/2				2211	1021	12	1436	18
Distance between wheels, inches		12	141/2	18	21	231/2	10%	314	434	434
Length of bearings, inches		31/2	434	4%	51/4	6	0	372		
Height to center of arbor,		- /-			0.11		436	51/2	61/2	71/2
inches		51/2	61/2	71/2	81/2	9	172	0.72	- 1-	
Height from floor to center					20	40	38	39	39	39
of arbor, inches		39	.39	39	39	10 x191/2	1 × 9	416× 9	6 x10½	61/2×14
Size of base of head, inches.	4 x 8	41/2× 9	6 x10 1/2	61/2×14	3 X1072	18 x25	10 ×14	11 x1514	12 x16	131/2×171/2
Size of base of column, inches	10 X14		12 x16	13½x17½	15 320	5 x 41/2	2 x 2	21/2x 21/2	3 x 3	3½x 3½
Size plain pulley, inches	2 x 2	21/2x 21/2	3 x 3	3½x 3½						2222221
Size cone pulley, inches Size T. & L. pulley, inches			31/4 x 21/4	21/2 216	4 x 4	6 x 4	216x 2	3 x 2	3½x 2½	314x 31/2
Size T. & L. pulley, inches	21/2× 2	3 x 2		165	455	427	531	497	478	465
Speed C shaft, plain pulley	531	497	478	100		512				100000000
Speed C shaft, cone pulley									0	10 - 21
Size C. S. drive plain pulley, inches	0	12 x 21/2	19 × 2	12 x 31/2	12 × 4	14 x 41/2	12 x 2	12 x 21/2	12 X 3	12 x 3½
inches	12 x 2	15 X 272	12 2 0							
Size C. S. drive cone pulley						14 & 15x41/2				
inches								1 9	6 x 3	6 x 31/2
Size C. S. T. & L. pulley	4 x 21/2	4 x 3	6 x 3	6 x 31/2	6 x 4	8 x 5	4 x 21/2	4 x 3	0 7 0	8
inches	4 8 272	6	6	8	S	8	6	01 - 11	21 7 1.1	26 x 112
Drop of countershaft, inches Size of shaft, inches	99 × 11	24 × 12	24 x 1 1	26 x 116	30 X 1 16	40 x 1½	22 X 116	24 7 116	52 16	75
Weight of head, pounds		33	52	10	100		22 75	95	105	120
Weight of column, pounds.		95	105	120	160	220	(9	00		A SHARE THE SAME
Weight of countershaft					0.5	150	50	55	60	70
Weight of countershaft		55	60	70	85	150	50	55	60	
Weight of countershaft pounds		55	60			-		-	217	70 265
Weight of countershaft pounds	50			265	345	520	147	183	217	265
Weight of countershaft pounds Weight, complete, pounds	50 147	55 183	- 60 217		345 \$39.00	520 \$51.00	147	183 \$24.00	217 \$27.00	265 \$34.00
Weight of countershaft pounds	50 147 \$19.00	55 183 \$22.00	917 \$25.00	265	345 \$39.00 33.00	520 \$51.00 45.00	147 \$20.00 17.00	183 \$24.00 20.00	217 \$27.00 23.00	265 \$34.00 28.00
Weight of countershaft pounds	147 \$19.00 17.00	55 183 \$22.00 20.00	- 60 217	265 \$31.00 28.00 23.00	345 \$39.00 33.00 26.00	520 \$51.00 45.00 34.00	147 \$20.00 17.00 16.00	183 \$24.00 20.00 17.00	217 \$27.00 23.00 20.00	265 \$34.00 28.00 23.00
Weight of countershaft pounds	147 \$19.00 17.00 16.00	183 \$22.00 20.00 17.00	917 \$25.00 23.00	265 \$31.00 28.00	345 \$39.00 33.00	520 \$51.00 45.00	147 \$20.00 17.00	183 \$24.00 20.00	217 \$27.00 23.00	265 \$34.00 28.00
Weight of countershaft pounds  Weight, complete, pounds  Head	147 \$19.00 17.00 16.00 23.00	55 183 \$22.00 20.00	\$25.00 23.00 20.00 28.00	265 \$31.00 28.00 23.00 31.00	345 \$39.00 33.00 26.00 34.00	520 \$51.00 45.00 34.00 42.00	\$20.00 17.00 16.00 23.00	183 \$24.00 20.00 17.00 26.00	217 \$27.00 23.00 20.00 28.00	265 \$34.00 28.00 23.00
Weight of countershaft pounds  Weight, complete, pounds Head	\$19.00 17.00 16.00 23.00	183 \$22.00 20.00 17.00	217 \$25.00 23.00 20.00	265 \$31.00 28.00 23.00	345 \$39.00 33.00 26.00	520 \$51.00 45.00 34.00	147 \$20.00 17.00 16.00	183 \$24.00 20.00 17.00	217 \$27.00 23.00 20.00	265 \$34.00 28.00 23.00 21.00 85.00
Weight of countershaft pounds  Weight, complete pounds Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft	147 \$19.00 17.00 16.00 23.00 52.00	183 \$22.00 20.00 17.00 26.00	\$217 \$25.00 23.00 20.00 28.00 68.00	265 \$31.00 28.00 23.00 31.00 82.00	315 \$39.00 33.00 26.00 34.00 98.00	\$51.00 \$51.00 45.00 34.00 42.00	147 \$20.00 17.00 16.00 23.00 53.00	183 \$24.00 20.00 17.00 26.00 61.00	217 \$27.00 23.00 20.00 28.00	265 \$34.00 28.00 23.00 21.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull	\$19.00 17.00 16.00 23.00 52.00	183 \$22.00 20.00 17.00 26.00	\$25.00 23.00 20.00 28.00	265 \$31.00 28.00 23.00 31.00	345 \$39.00 33.00 26.00 34.00	520 \$51.00 45.00 34.00 42.00	\$20.00 17.00 16.00 23.00	183 \$24.00 20.00 17.00 26.00	217 \$27.00 23.00 20.00 28.00 70.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00
Weight of countershaft pounds  Weight, complete, pounds Head	147 \$19.00 17.00 16.00 23.00 52.00	183 \$22.00 20.00 17.00 26.00 59.00 68.00	\$25.00 23.00 20.00 28.00 68.00 76.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00	345 \$39.00 33.00 26.00 34.00 98.00	\$520 \$51.00 45.00 34.00 42.00 130.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00	183 \$24.00 20.00 17.00 26.00 61.00	217 \$27.00 23.00 20.00 28.00 70.00	265 \$34.00 28.00 23.00 21.00 85.00
Weight of countershaft pounds  Weight, complete pounds  Head Column Countershaft Pull, Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Complete Machine with Self	\$19.00 17.00 16.00 23.00 52.00 59.00	183 \$22.00 20.00 17.00 26.00 59.00	\$217 \$25.00 23.00 20.00 28.00 68.00	265 \$31.00 28.00 23.00 31.00 82.00	315 \$39.00 33.00 26.00 34.00 98.00	\$51.00 \$51.00 45.00 34.00 42.00	147 \$20.00 17.00 16.00 23.00 53.00	183 \$24.00 20.00 17.00 26.00 61.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds  Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 59.00	183 \$22.00 20.00 17.00 26.00 59.00 68.00	217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00	\$39.00 33.00 26.00 34.00 98.00 106.00	\$51.00 \$51.00 45.00 34.00 42.00 130.00 143.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00	183 \$24.00 20.00 17.00 26.00 61.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00
Weight of countershaft pounds  Weight, complete, pounds Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 59.00	183 \$22.00 20.00 17.00 26.00 59.00 68.00	\$25.00 23.00 20.00 28.00 68.00 76.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00	345 \$39.00 33.00 26.00 34.00 98.00	\$520 \$51.00 45.00 34.00 42.00 130.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds  Head	50 147 \$19.00 17.00 16.00 23.00 52.00 1 59.00 1 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	\$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pul Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 59.00 1.4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	\$39.00 33.00 26.00 34.00 98.00 106.00	\$51.00 \$51.00 45.00 34.00 42.00 130.00 143.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 59.00 1.4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	\$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds  Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 59.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	\$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Cone Pulley of Countershaft Extra for Cone Pulley of Countershaft Extra for Randall Graphit	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	\$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine Pull Countershaft Complete Machine with Self Contained Countershaft. Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Randall Graphit Extra for Randall Graphit	50 147 \$19.00 17.00 16.00 23.00 52.00 1 59.00 1 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00
Weight of countershaft pounds  Weight, complete, pounds Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 1 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley on Head Extra for Cone Pulley on Countershaft Extra for Cone Pulley on Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, fo	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley on Head Extra for Cone Pulley on Countershaft Extra for Cone Pulley on Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, fo	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft.  Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Cone Pulley of Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, fo	50 147 \$19.00 17.00 16.00 23.00 52.00 1 59.00 1 4.00 1 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00 5.00 30.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 6.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00 5.00 30.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39.00 33.00 26.00 34.00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 8.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, for 2-inch Wheels, Onen Type 18-inch Wheel Guards for No. 6	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 1 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00 5.00 30.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 6.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00 4.00 These siz is half respecti	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds  Head Column Countershaft Pull, Countershaft Pull, Countershaft Complete Machine with Detached Countershaft Complete Machine with Self Contained Countershaft.  Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, for No. 6 Wheel Guards, per pair, Extra for Meel Guards for No. 6 Wheel Guards, per pair, Extra for Cone Type  18-inch Wheel Guards for No. 6 Wheel Guards, per pair, Extra for Cone Type  18-inch Wheel Guards for No. 6 Wheel Guards, per pair, Extra for Cone Type  18-inch Wheel Guards, per pair, Extra for Randall Graphit	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00 4.00	\$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00 30.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 6.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00 4.00 These siz is half respecti	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00
Weight of countershaft pounds  Weight, complete, pounds.  Head Column Countershaft Pull. Countershaft Complete Machine with Detached Countershaft Complete Machine, Pull Countershaft Complete Machine with Self Contained Countershaft Complete Machine with Self Contained Countershaft Extra for T. & L. Pulley of Head Extra for Cone Pulley of Head Extra for Cone Pulley of Countershaft Extra for Randall Graphit Bronze or Cast Iron Shel Bearings Surface Attachment Wheel Guards, per pair, for 2-inch Wheels, Open Type 18-inch Wheel Guards for No. 6	50 147 \$19.00 17.00 16.00 23.00 52.00 59.00 4.00 4.00	55 183 \$22.00 20.00 17.00 26.00 59.00 68.00 4.00 4.00	60 217 \$25.00 23.00 20.00 28.00 68.00 76.00 78.00 4.00 5.00 30.00	265 \$31.00 28.00 23.00 31.00 82.00 90.00 93.00 6.00	345 \$39,00 33.00 26.00 34,00 98.00 106.00 109.00 6.00	\$520 \$51.00 45.00 34.00 42.00 130.00 143.00 143.00 6.00 6.00 9.50	147 \$20.00 17.00 16.00 23.00 53.00 60.00 4.00 4.00 These siz is half respecti	183 \$24.00 20.00 17.00 26.00 61.00 70.00 70.00 4.00	217 \$27.00 23.00 20.00 28.00 70.00 78.00 80.00 4.00	265 \$34.00 28.00 23.00 21.00 85.00 93.00 96.00 6.00

WESTERN POLISHING MACHINES.



No. 1, 2 and 3.

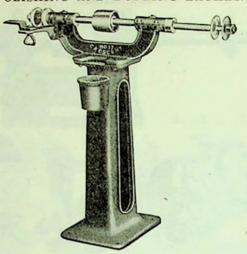
The description of Western Grinding Machines given on preceding page, applies to Western Polishing Machines. When ordered with column or countershaft, the column

and countershaft shown on preceding page are furnished.

These machines are suitable for belting from overhead, or from a shaft on the floor back of the machines. No. 4 may also be belted from shaft below floor. No. 4 is not furnished separate from column.

separate from commin.			
Specificat			
Machine No. 1.	No. 2.	No. 3.	No. 4.
Diam, of arbor in collars %	3/4	1	1 or 11/4
Diam, of arbor in bear-			
ings	7/8	116	110
Length of arbor 21	26	33	48
Distance between			
wheels 153/4	191/2	25	41
Length of bearing 11/2	2	3	7
Height to center of arbor			
on bench 4½	6	9	
Height to center of arbor			
on column 40	40	41	36
Size pulleys on arbor21/2x11/2	3x2	4x3	4x4
Size countershaft drive			
pulley12x1½	12x2	12x3	12x4
Size countershaft tight	12.12	12.10	12.1
and loose pulleys 4x2	4x21/2	6x3	6x4
Weight of head 15	25	45	90
Weight of column 45	65	95	105
Weight of countershaft. 35	45	55	85
weight of countershare. 35	-10	33	00
Weight complete 96	135	195	280
Weight, complete 96	100	133	200
Prices			
Head\$10.00	\$15.00	\$21.00	\$48.00
Column 10.00	13.00	17.00	
Countershaft 850	11.00	14.00	20.00
Complete 28.50	39.00	52.00	68.00
Extra T. & L. Pulley on		OTEL -	
Head 2.00	2.50	2.50	4.00
Taper Points on all sizes 3.00	3.00	3.00	7.00
407 P.	_	-	

POLISHING AND BUFFING LATHES.



No. 17.

This machine is used by tire repair shops exclusively. The extended arbor is for the buffing brush, and the short end gives rigid support to an emery wheel or rotary rasp.

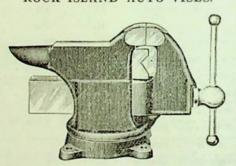
Will carry emery wheels as large as 2x10 inches; spindle,

1½x37 inches; diameter of spindle between flanges, 1 inch; diameter of flanges, 4 inches; bearings, 1½x5½ inches; pulley, 3½x3 inches; distance from floor to spindle, 36½

Weight, 150 pounds.

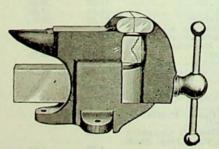
No. 17. Price, each\$25	00.
Extra for Tight and Loose Pulley	3.00
Extra for one Guard	.25
Liet Net	

# ROCK ISLAND AUTO VISES.



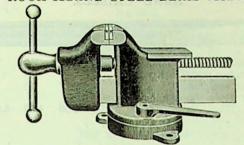
Swivel Type.

Handy for all kinds of Auto Repair Work. Width jaws, 31/2 inches. Capacity pipe jaws, 1/8-inch to 21/2 inches. Weight, 80 pounds. No. 241. Price, each..... . . . . . . . . . . . \$16.00



Stationary Type

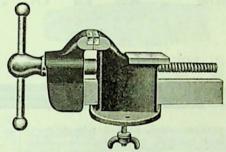
Width jaw, 3 inches.	Capacity	 1/s-inch	to 11/	inches.
Weight, 32 pounds. No. 231. Price				\$10.00
Pipe Jaws. Extra	List Ne	 		1.30



Swivel Base.

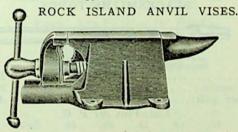
These Vises have steel beams or sliding bars, steel screws, cold rolled steel handles, and crucible tool steel jaws. The Vise is so designed that there is an anvil provided. Each Vise is furnished with a centre bolt, nut and washer for fastening to bench.

No. Width Jaw.	Open.	Weight.	Price, each.
341 21/2	3 in.	11 lbs.	\$ 4.50
342 3	3½ in.	13 lbs.	5.50
343 31/2	4 in.	19 lbs.	7.00
344 4	6 in.	30 lbs.	10.25



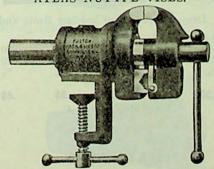
Stationary Pattern.

No.	Width Jaw.	Open.	Weight.	Price, each.
351	21/2	3 in.	11 lbs.	\$ 3.75
352	3	3½ in.	13 lbs.	4.75
353	31/2	4 in.	19 lbs.	5.25
354	4	6 in.	30 lbs.	8.25
		331 P. C.		



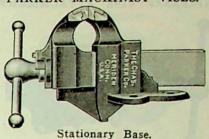
Anvil and Vise combined, with jaws for holding pipe. This Vise is intended only for light work. Anvil and all finished parts highly polished and lacquered.

finished parts highly polished and lacquered.
Width Jaw. Opens. Weight.
No. 380.....3 5 26 1802 \$2.00
ATLAS NUTYPE VISES.



Jaws can be rotated, then locked, and at any desired angle.

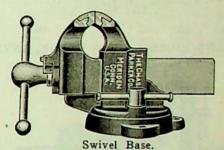
# PARKER MACHINIST VISES.



Renewable, milled and fitted tool steel faces.

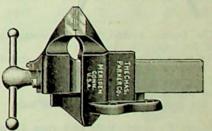
Extra size, strong, cut screw and nut. Grey iron castings. Saddle and saddle screw.

	Weight,	Jaw.	Vise	Price.
No.	lbs.	in.	Ops.	each.
103	35	31/2	51/2	\$11.25
104		4	61/2	12.75
105		41/2	7	15.50
106	83	5	8	20.00



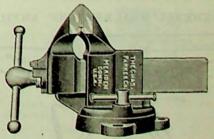
	Weight,	Jaw.	Vise	Price.
No.	lbs.	in.	Ops.	each.
203	41	31/2	51/2	\$15.00
204	57	4	61/2	17.00
205	75	41/2	7	20.00
206	104	5	8	30.00
	21	D C		

# PARKER'S WOOD-WORKERS' VISES.



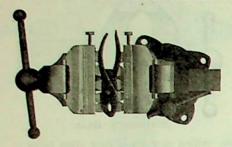
Stationary Base.

Faces of special tool steel, deeply faced. Cast to the jaws.



Swivel Base.

# UNIVERSAL VISE ATTACHMENTS.



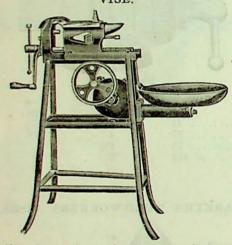
Fits any vise; grips all shapes.

It instantly converts an ordinary square-jawed vise into a tool of a thousand purposes through the independent action of each tooth or gripper of the jaw in clasping the form or shape upon which work is to be done.

Made of cold-rolled, tempered tool steel and electrically

welded.	
4-inch Set.	Price\$8.00
5-inch Set.	Price 9.00
	List Net

# ROCK ISLAND COMBINATION FORGE, ANVIL AND



Frame-The frame is steel, center casting made to be used as shelf for tools, oil cans, etc.

Forge—Pan is oval shape, 12x15 inches, stands about 27

inches from floor.

Fan-Is 7 inches in diameter, is driven by an accurately

cut gear and pinion.

Anvil—Is 3½ inches wide, by 12 inches long. A hardy is furnished.

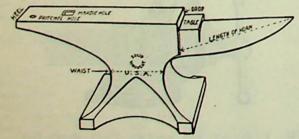
Vise-Jaws are 31/2 inches wide and open 11 inches. Pipe

jaws will take pipe up to 2 inches diameter.

Drill Chuck—Takes ½ inch round shank drill. Chucks

are steel. The machine is 52 inches high and 48 inches long. Weight about 135 pounds.

# GENERAL BLACKSMITHS' ANVILS.

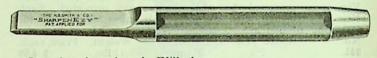


American, 80 to 425 lbs.....per lb., 184 Base. Under 80, and over 425 lbs., extra.

#### HAND CHISELS.

	4	CHAMPI	ON	Na Colomb		
Size, cut inches		1/2	5/8	3/4	7/8	1
Length, inches	. 2	6 4	7	8 10	$8\frac{1}{2}$ 15	21
Price per doz. polished points\$2	.00	2.00	3.00	4.50	6.00	7.50
501	P.	. C.				

### "SHARPEN-EZY" COLD CHISELS.



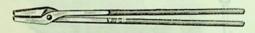
Is a drop-forged tool. Will sharpen easy. The steel is especially treated. Sizes..... Price, per dozen.....\$2.25 3.25 203 P. C.

# ROUND HAND PUNCHES.



Made of octagon steel, 10 inches long. Size point, inch.... 16 2403 2854 2855 4306 6007 Per dozen......\$2.28 2.28 2.28 2.28 2.88 2.88 4.35 6.00

### BLACKSMITHS' TONGS.



# Plain Straight Lip.

Number	18	20	22	24
Length, inches	18	20	20	24
Price, per pair	\$0.42	.45	.48	.54
List, Plus	201 P. (	C.		

# BOLT TONGS, CURVED LIP.



Solid Steel, Drop Forged. For holding Bolts and Round Iron.

Number 4	5	6	8	10	12
Length 18	18	20	20	22	22
Inches 1/4 Per pair,	r <sup>5</sup> c	3/8	. 1/2	5/s	3/4
List\$0.50	.50	.55	.55	.63	.63
	List, I	Plus 204 1	P. C.		

# PICK-UP TONGS.



	For picking up hot iron.	
Length, 22 inches	. Per pair	\$1.25

# BLACKSMITHS' ANVIL TOOLS

Hardies.



Hot Cutting Chisels.



Cold Cutting Chisels.



Round Hole Heading Tools.



Square-hole Heading Tools can be turnished from factory.

Size of Hote:

Inches 1/4 1/8 3/8 1/8 1/2 1/8 5/8 3/4 Each.... \$0.65 .65 .65 .65 .65 .85 .85 .85

Round Eye Punches for Handle



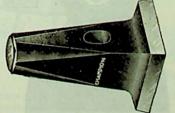
Size of Point:

Inches 1/4 for 3/8 1/0 1/2 for 5/8 3/4 Bach... \$0.40 .40 .40 .40 .50 .50 .55

Square Eye Punches for Handle.



Flatters.



List, Plus 501 P. C.

Set Hammers.



Size of Square Face:

Inches 1½ 1½ 1½ 1½ 1¾ 2 Each. \$0.50 .55 .65 .80 .80 1.00

Top Swages.



Size of Groove:

Inches .50 11/2 Each.... \$0.50 .50 .50 .50 .50 Inches 11/8 11/4 13/8 .65 .75 .75 Each.... \$0.65

Bottom Swages.



One-inch Shank, regular. Other size shanks shipped from

factory.

Size of Groove: 3/4 .65 Inches \$0.50 Each.... .50 11/4 11/2 2 Inches .85 .85 \$0.65 .65 .75 .75 Each....

Top Fullers.



Size of Round Part:

 Inches
 ¼
 ¼
 ¼
 ¼
 ¼
 ¼
 ¾
 ¾

 Each...
 \$0.50
 .50
 .55
 .55
 .55
 .55
 .55
 .55

 Inches
 ¾
 1
 1¼
 1¼
 1½
 1½
 1¾
 2

 Each...
 \$0.65
 .65
 .65
 .70
 .70
 .80
 .85
 .95

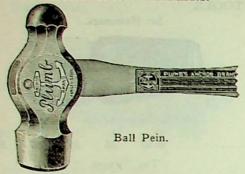
Bottom Fullers.

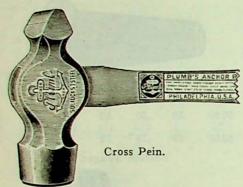


One-inch Shank, regular. Other size shanks can be furnished from factory.

Size of Round Part:								
Inches	1/4	Ye	3/8	70	1/2	re .	%	3/4
Each	\$0.50	.50	.55	.55	.55	.55	.55	.55
Inches	7/8	1	11/8	11/4	13%	11/2	13/4	2
Each	\$0.65	.65	.65	.70	.70	.80	.85	.95
		Ti	et Plus	506 P	0			

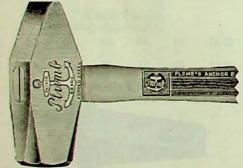
#### MACHINISTS' HAMMERS.



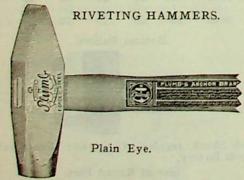


00.	Weight, 12 ozs. Price, each 802	\$1.00 -
0.	Weight, 1 lb. Price, each 857	1.05
1.	Weight, 1 lb., 4 ozs. Price, each 903	1.15
2.	Weight, 1 lb., 8 ozs. Price, each1006	1.20
3.	Weight, 1 lb., 12 ozs. Price, each1109	1.25
4.	Weight, 2 lbs. Price, each1156	1.40
5.	Weight, 2 lbs., 4 ozs. Price, each1252	1.45
6.	Weight, 2 lbs., S ozs. Price, each1356	1.60
	0. 1. 2. 3. 4. 5.	00.       Weight, 12 ozs. Price, each

#### BLACKSMITH HAND HAMMERS.

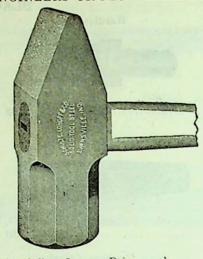


No. 2.	Weight, 2 lbs., 10 ozs.	Price, each 1207	\$1.50
No. 3.	Weight, 3 lbs.	Price, each1252	1.75
No. 4.	Weight, 3 lbs., 8 ozs.	Price, each1356	1.90
No. 5.	Weight, 4 lbs., 8 ozs.	Price, each1459	2.00



No. 1.	Weight.	7 ozs.	Price.	each	851	\$1.10
				each		1.25
No. 3.	Weight, 1	2 ozs.	Price,	each	1002	1.35
No. 4.	Weight, 1	5 ozs.	Price,	each	1107	1.50
No. 5.	Weight, 1	8 ozs	Price	each	1153	1.65

#### ENGINEERS' OR PLOW HAMMERS.



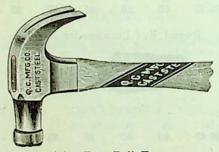
No.	3.	Weight, 2	lbs.,	8			each1201	\$1.50
No.	4.	Weight, 3	lbs.				each1309	1.65
No.	5.	Weight, 3	lbs.,	8	ozs.	Price,	each1502	2.00
No.	6.	Weight, 4	lbs.,	8	ozs.	Price,	each1608	2.00

#### BLACKSMITH SLEDGES.



	Cross Pein.	
Under 4 lbs. Five lbs. and	Per lbover. Per lb	188 \$0.40 153 .30

#### NAIL HAMMERS.



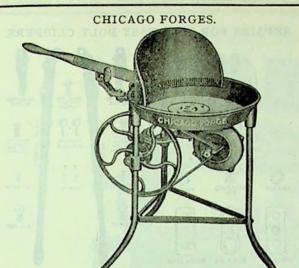
Adze Eye, Bell Face.

No. 140. Size 1½. Weight, 1 lb. Price, each 906 \$1.25

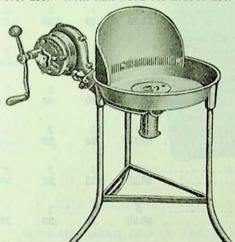
#### BROAD AXES.



No.	3.	Weight,	21/8	lbs.;	bit.	5 in.	Price.	each 2201	\$3.00
No.	4.	Weight,	21/2	lbs.;	bit,	51/2 in.	Price,	each 2503	3.50



Is suited to quarries, mines, etc. Fan, 8% inches; Hearth, 22 inches; Height, 30 inches; Weight, 85 pounds.

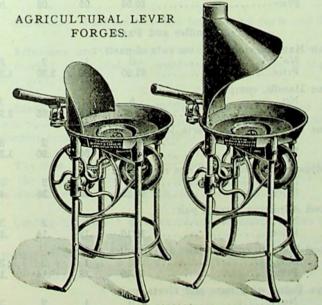


#### TIGER FORGES.

Blower, 9 inches; Hearth, 22 inches; Height, 30 inches; Weight, 98 pounds. Capacity to heat, 3½-in. iron.

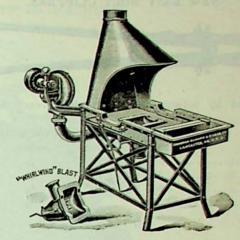
No. 254. Tiger. Price, each, \$21.70 No. 255. Tiger. With Hood for indoor work.

Price, each, \$24.40



List Net.

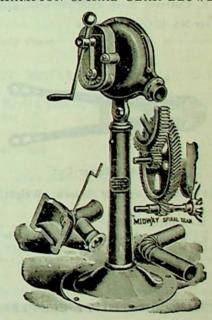
CHAMPION STEEL FORGES.



With Half Hood.

No. 409. Champion Steel Blacksmiths' Forge Hearth 30x40 inches, weight 310 pounds.

#### CHAMPION SPIRAL GEAR BLOWERS.



No. 70 Champion "Midway" Spiral-Geared Blacksmith Blower is a tool, built with "Midway" or Cross Spiral Gearing. The Champion "Midway" Spiral Gearing is simple in construction, and without small gears or pinions, and therefore is durable and practical. We recommend this Blower as a strong and well-built Blower, with a good blast, and is sold with our guarantee.

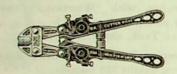
#### NEW EASY BOLT CLIPPERS.



Adjusted by set-screws. No special wrench or shims needed

			To cut bolts, inches.	Price, Each.
No. 0	AND THE RESERVE	18	1 <sup>5</sup> c	\$3.75
No. 1	5%	241/2	3/8	5.00
No. 2	9	30	1/3	7.00
No. 3	13	36	5/8	9.00

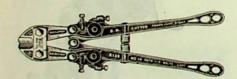
#### O. K. CUTTERS.



No. 10. Clipper Cut.

All parts are interchangeable. There is ample adjustment to take up the wear on cutting edges. Weight, 11/2 pounds. Length, 10 inches. Capacity, 36-inch. Extra Jaws for No. 10 O. K. Cutters.

Per pair.....1006



#### No. 14. Clipper Cut.

Length, 14 inches. Capacity 1/4-inch. Weight, 2 pounds 5 ounces. No. 14. O. K. Cutters. Price, each......2206 \$2.50 Extra Jaws for No. 14 O. K. Cutters. Per pair......1206 1.00

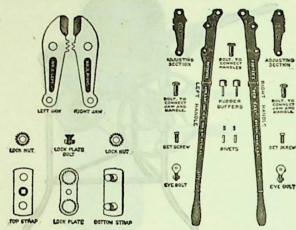
#### CHAMPION UTILITY CLIPPERS.



Designed to cut battery terminal posts leaving top of post flat. The angle of the jaws throws handles above a level plane so that any position of work is accessible. Tool can be used on copper cable. Has capacity for cutting 1/4-inch bolts in the thread and small rivets. Weight, 21/4 lbs. Length, 15% inches. Drop forged.

Price, each......3006 \$4.00

#### REPAIRS FOR NEW EASY BOLT CLIPPERS.



Cutter Heads	and Par	ts.		
Cutter Head, complete (see cut				
No	\$2.10	2.70	3.70	4.65
Pair Cutting Jaws, ready for use	leon le			
No Price	\$1.35	1.65	2.35	3.00
One Cutting Jaw, ready for use:	Ψ2.00	1.00	2.00	- 9
No	0	1 .83	2 1.18	3 1.50
Price  Bottom Strap, with two steel be	\$0.68	.83	1.10	1.50
No	0	1	2	3
Price	\$0.40	.50	.60	.70
Top Strap:	0	1	2	3
Price	\$0.10	.20	.30	.40
Lock Nuts, pair:	0	1	2	3
Price	\$0.10	.15	.20	.25
Lock Plate:		M.		
No Price	\$0.10	.15	.20	.25
Lock Plate Bolt:				
No Price	\$0.05	.05	.05	.05
		.Ua	.05	.UD
	40.00	9171	TOURO	4
Handles and			DO EN CO	5
Handles and Pair Handles, complete (see cuts	d Parts.	(s):		
Handles and Pair Handles, complete (see cuts No	d Parts.	STORE	2 3.30	3 4.35
Handles and Pair Handles, complete (see cuts	d Parts. s of part	(s):	2	3
Pair Handles, complete (see cuts No Price One Handle, complete: No	d Parts. s of part 0 \$1.90	(s): 1 2.30	2 3.30 2	3 4.35
Handles and Pair Handles, complete (see cuts No	d Parts. s of part 0 \$1.90	1 2.30 1 1.15	2 3.30	3
Handles and Pair Handles, complete (see cuts No	d Parts. s of part 0 \$1.90  0 \$0.95 s piece o	1 2.30 1 1.15 only:	2 3.30 2 1.65	3 4.35 3 2.20
Handles and Pair Handles, complete (see cuts No	d Parts. s of part 0 \$1.90  0 \$0.95 g piece 0 \$0.40	1 2.30 1 1.15 only: 1 .50	2 3.30 2 1.65	3 4.35 3 2.20
Handles and Pair Handles, complete (see cuts No	d Parts. s of part 0 \$1.90  0 \$0.95 g piece 0 \$0.40	1 2.30 1 1.15 conly: 1 .50	2 3.30 2 1.65	3 4.35 3 2.20
Handles and Pair Handles, complete (see cuts No	d Parts. s of part 0 \$1.90  \$0.95 g piece 0 \$0.40 et, each	1 2.30 1 1.15 only: 1 .50	2 3.30 2 1.65 2 .90	3 4.35 3 2.20 2 1.35
Handles and Pair Handles, complete (see cuts No	0 \$1.90 0 \$0.95 c piece 0 \$0.40 et, each 0 \$0.25	1 2.30 1 1.15 conly: 1 .50 :	2 3.30 2 1.65 2 .90 2 .35	3 4.35 3 2.20 3 1.35
Handles and Pair Handles, complete (see cuts No	0 \$1.90 0 \$0.95 c piece c 0 \$0.40 et, each	1 2.30 1 1.15 only: 1 .50	2 3.30 2 1.65 2 .90	3 4.35 3 2.20 3 1.35
Handles and Pair Handles, complete (see cuts No	0 \$1.90 0 \$0.95 c piece c 0 \$0.40 et, each 0 \$0.25 0 \$0.10 handles	1 2.30 1 1.15 only: 1 .50 : 1 .30	2 3.30 2 1.65 2 .90 2 .35	3 4.35 3 2.20 3 1.35 3 .40
Handles and Pair Handles, complete (see cuts No. Price.  One Handle, complete: No. Price.  One Handle, without parts, long No. Price.  Adjusting Sections, with one riv No. Price.  Steel Adjusting Screws, pair: No. Price.  Steel Bolts, to connect jaws and No.	0 \$1.90 0 \$0.95 0 piece 0 0 \$0.40 et, each 0 \$0.25 0 \$0.10 handles	1 2.30 1 1.15 only: 1 .50 : 1 .30	2 3.30 2 1.65 2 .90 2 .35	3 4.35 3 2.20 3 1.35 3 .40
Handles and Pair Handles, complete (see cuts No. Price.  One Handle, complete: No. Price.  One Handle, without parts, long No. Price.  Adjusting Sections, with one riv No. Price.  Steel Adjusting Screws, pair: No. Price.  Steel Bolts, to connect jaws and No. Price.	0 \$1.90 0 \$0.95 0 piece 0 \$0.40 et, each 0 \$0.25 0 \$0.10 handles 0 \$0.10	1 2.30 1 1.15 only: 1 .50 : 1 .30	2 3.30 2 1.65 2 .90 2 .35	3 4.35 3 2.20 3 1.35 3 .40
Handles and Pair Handles, complete (see cuts No. Price.  One Handle, complete: No. Price.  One Handle, without parts, long No. Price.  Adjusting Sections, with one riv No. Price.  Steel Adjusting Screws, pair: No. Price.  Steel Bolts, to connect jaws and No. Price.  Eye Bolts, with nuts and rivet No.	0 Parts. 0 \$1.90 0 \$0.95 g piece 0 \$0.40 et, each 0 \$0.25 0 \$0.10 handles 0 \$0.10 s, pair:	1 2.30 1 1.15 only: 1 .50 : 1 .30 1 .12 , pair: 1 .12	2 3.30 2 1.65 2 .90 2 .35 2 .14	3 4.35 2.20 3 1.35 3 .40 3 .16
Handles and Pair Handles, complete (see cuts No	0 \$1.90 0 \$0.95 0 piece 0 \$0.40 et, each 0 \$0.25 0 \$0.10 handles 0 \$0.10 s, pair: 0 \$0.20	1 2.30 1 1.15 only: 1 .50 : 1 .30 1 .12 , pair: 1 .12	2 3.30 2 1.65 2 .90 2 .35 2 .14	3 4.35 3 2.20 3 1.35 3 .40 3 .16

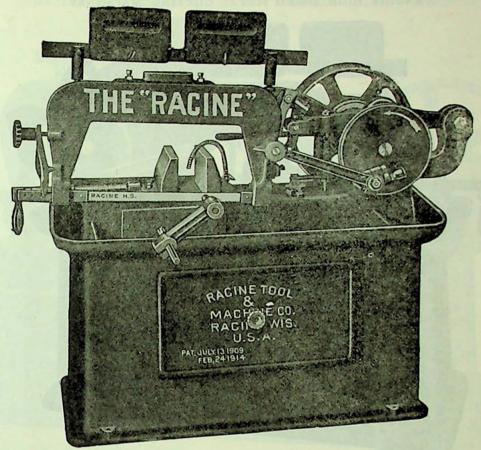
List, Plus 103 P. C.

.25

30

.35

(F) RACINE HIGH SPEED METAL CUTTING MACHINES.



No. 1-Eats Steel. Standard the World Over.

THE ORIGINAL, AUTOMATIC, POSITIVE LIFT, DRAW CUT, METAL CUTTING MACHINE.

Automatic Lifting Device—This is accomplished by using a Patented, Return Stroke, Automatic Lifting Device, which lifts the blade clear of the work. No Dragging Back on the non-cutting stroke.

Simplicity-This machine has few moving parts and is very compact and Rigid.

Efficiency and Economy—This machine cuts Faster, Truer and is More Economical than any machine of its kind on the market. The material saved by this machine in the cut, as compared with a cold saw, will pay for the machine many times over.

Blade Holders—The Blade Holders are made from a lx%-inch flat bar fitted into a milled slot which holds the blade square with the work, therefore it must cut straight, while the Blade Tightener enables the operator to give the blade sufficient tension without the use of a wrench.

The Saw Frame Guide—The Saw Frame Guide is made of the best grade of gray iron, which prevents Springing, removing the objectionable feature of a steel guide. This guide also holds itself automatically at any height, which is very convenient when placing stock into the machine.

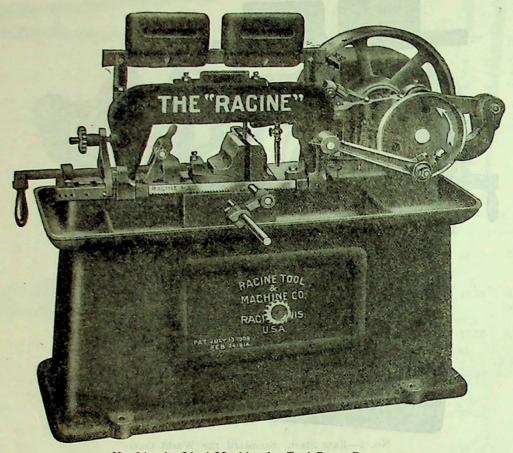
Cooling System-A positive circulating pump applies a cutting compound on the blade.

SPECIFICATIONS Capacity—0 to 6 in. Blades—10 to 14 in. Pulley—3x12 in. Floor Space—21x40 in. Height over all—36 in. Height to top of table—20½ in. Weight (crated)—500 lbs. Net Weight—435 lbs.

Speed of 12 in. Pulley-130 R. P. M. for cutting mild steel.

List Net.

(F) RACINE HIGH SPEED METAL CUTTING MACHINES.



No. 2A-An Ideal Machine for Tool Room Purposes.

THE ORIGINAL, AUTOMATIC, POSITIVE LIFT, DRAW CUT, METAL CUTTING MACHINE

Automatic Lifting Device—This is accomplished by using a Patented, Return Stroke, Automatic Lifting Device, which lifts the blade clear of the work. NO DRAGGING BACK on the non-cutting stroke.

Swivel Vise—This machine is equipped with a practical QUICK ACTING VISE which swivels on the table bed and grips the stock close up to the saw blade, enabling the operator to cut short pieces at any desired angle.

Simplicity-This machine has few moving parts and is very compact and RIGID.

Efficiency and Economy—This machine is equipped with Special 3-Speed Transmission, which gives the proper speeds for cutting any kind of material (practically giving you THREE MACHINES in ONE) and cuts Faster, Truer and is more Economical than any machine of its kind on the market. We especially recommend this type for heavy, VICIOUS work. The material saved by this machine in the cut, as compared with a cold saw, will pay for the machine many times over.

Blade Holders—The Blade Holders are made from a 1x%-inch flat bar fitted into a milled slot which holds the blade square with the work, therefore it must cut straight, while the BLADE TIGHTENER enables the operator to give the blade sufficient tension without the use of a wrench.

The Saw Frame Guide—The Saw Frame Guide is made of the best grade of gray iron, which prevents SPRINGING, removing the objectionable feature of a steel guide. This guide also holds itself automatically at any height, which is very convenient when placing stock into the machine.

Cooling System-A positive circulating pump applies a cutting compound on the blade.

SPECIFICATIONS Capacity—0 to 6 in. Blades—10 to 14 in.

Pulley—3x12 in. Floor space—30x44 in. Height over all—34 in. Height to top of Table—22 in. Weight (crated)—810 lbs. Net Weight—710 lbs.

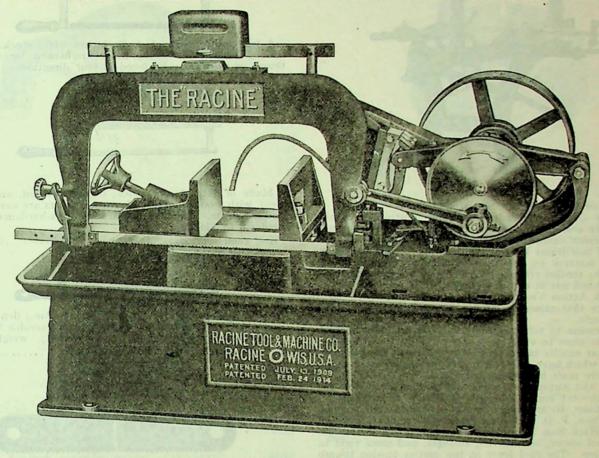
Speed of 12 in. Pulley-130 R. P. M. for cutting mild steel.

For Motor Drive-Write for Further Information.

No. 2A. With 3-Speed Attachment. Price, each.....

.....\$225.00

(F) RACINE HIGH SPEED HEAVY DUTY METAL CUTTING MACHINES.



No. 7A-Heavy Duty Machine, 12x12-in. Capacity with Three-Speed Attachment.

#### GENERAL SPECIFICATIONS.

Automatic Lifting Device—Lifting Device positively lifts the blade clear of the work; no dragging back on the non-cutting stroke. The amount of clearance is adjustable. Lift is accomplished by an easy cam action which raises the blade clear of the work at end of cutting stroke, and applies the blade gently at the beginning of the cutting stroke.

Simplicity—A minimum of moving parts, are compact and very RIGID; Adjustments are simple. The life of a "RACINE" is practically everlasting.

Swivel Vise—Equipped with a quick acting swivel vise which swivels on the table bed and grips the stock close up to the saw blade, enabling the operator to cut short pieces at any desired angle.

Accuracy—The fact that blade is lifted free and clear of the work on each and every non-cutting stroke, is the greatest reason for ability to cut more accurately. A hack saw blade is constructed on the principle of the "Draw Cut." The teeth are hooked forward in the direction of the cutting stroke and are staggered and set in such a manner that the groove is cut slightly wider than the gauge of the blade itself, thus, free passage of the blade through the work is allowed for and the blade will not stick or bind.

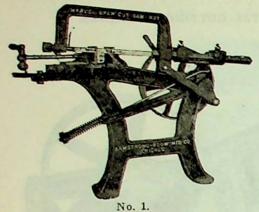
RAPID-MASSIVE-STRONG-DURABLE. A Machine Tool, not a hack saw. All parts interchangeable and accurately machined. This machine is adapted for cutting Angles, Channels, I-Beams, Die Blocks, Pipe, Tubing, etc.

#### Speed of 16 in. Pulley-120 R. P. M. for cutting mild steel.

No. 7.	For belt drive, without motor arrangement or 3-speed transmission.	Price, each\$360.00
No. 7A.		Price, each
No. 7B.	Same as No. 7, equipped with 1-H. P. motor.	Price, each 510.00
No. 7C.	Same as No. 7, equipped with 1-H. P. motor and 3-speed transmission.	Price, each 560.00

List Net.

#### (F) MARVEL DRAW CUT HACK SAWS.



Saws Fast and Straight. Saves Saw Blades.

A Draw Cut. An eccentric on inner portion of crank, through which extends a steel rod, hooked firmly to rear portion of saw frame bearing, the tension pressing the saw down on material on the Draw Cut. On return or push motion, the tension releases. The tension on spring is regulated by hand nut at end of spring.

A Quick Action Vise, that saves time.

A device that raises or lowers saw and holds it at any desired angle.

An extension to table, so material rests on both sides of

Saws close to vise.

The wear can be taken up to any extent in the two saw bearings, which have also receptacles for oiled waste.

The drive shaft has bronze bearing.

Starter and Automatic Stop are at front of machine. Capacity-4x4 inches. Length of Blade-12 inches.

Revolutions, 60 to 90 per minute. Weight, 110 pounds.

No. 1. Price, F. O. B. Illinois Factory. Each......\$29.00

No. 2 Hack Saw is built on the same principle as No. 1 described above, but heavier, stronger, and more rigid in construction. The feed lever at top carries tension thumb screw, and should be left engaged when sawing medium or light material.

The quick action, Heavy Vise Swivels both ways, so that material can be inserted to cut on an angle either way.

Has adjustable stroke. Longest, 63/4 inches; shortest, 4 inches

Capacity, 6x6 inches on long stroke, and 8x8 inches on short stroke.

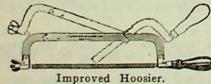
Takes blade from 12 inches to 17 inches. Revolutions,

50 to 70 per minute. Weight, 260 pounds.

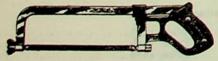
NOTE.—The entire vise can be instantly removed (leaving a T-slotted table for holding irregular shapes), and makes an excellent tool for clamping work on Drill Press,

No. 2. Price, F. O. B. Illinois Factory. Each......\$58.00 List Net.

#### HACK SAW FRAMES.



Made of high-grade Steel, nickeled and polished. can be faced four different ways. Takes blades 8 to 12 inches. Price, each ......804 \$1.00



No. 12. Easy Grip.

Just fits the hand. Finely polished. Capacity, 8 to 12inch blades. Price, each......2453 \$3.15

#### HACK SAW FRAMES.



A light stiff frame of \$2x5% inches, steel stock, nickeled, stained hardwood handle, blades tightened by turning a thumb nut and may be faced in four directions.

Capacity.	Weight Per Doz	Price, Each
8 inch	12 lbs.	756 \$1.00
Charles and the Miles	MINECE -	
		Capacity. Per Doz.

No. 6.

Made of extra heavy stock, highly finished, and is very rigid, with wood handle. The adjustments are easy position and accurate. Small parts are all case-hardened. Takes blades 6 to 12-inch.

Price, each..... 



No. 78. Sheath back; extensible 8-in, to 12-in.; depth 21/2-in.; cold drawn steel, 32-in. x 18-in.; blade faceable four directions; polished and nickel plated; weight, 1 lb. Price, each......853 \$1.10

#### HACK SAW BLADES.



#### Universal Hand Blades.

For cutting solids in Iron and Steel.

Length,	Width,	Point,	Weight,	Price,
Inches.	lnches.	Inches.	Oz., Doz.	Doz.
8	1/2	18-24	6	\$0.67
9	1/2	18-24	7	.75
10	1/2	18-24	7	.84
12	re re	18-24	8	1.00

#### Universal Power Blades.

	CIIIV	Tout I Owel	Diaucs.	
Length,	Width,	Point,	Weight,	Price,
Inches.	Inches.	Inches.	Oz., Doz.	Doz.
12	5/8	14	8	\$1.20
12	3/4	14	10	1.35
14	1	14	12	2.86
14	1	10	12	2.86
17	1	10	13	3.47
18	1	10	14	3.68
21	1	10	16	5.51
24	1	10	17	6.30



#### Utility Hand-Saw Blades.

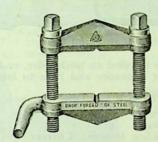
Length.	Width.	Point.	Weight.	Price.
Inches.	Inches.	Inches.	Oz., Doz.	Doz.
8	1/2	24	6	\$0.67
9	1/2	24	7	.75
10	1/2	24	7	.84
12	re	24	8	1.00

#### (F) HEAVY LATHE DOGS.



Inche	s.													ice.														ic		
1/2												. :	\$1	0.50	13/4											. :	\$	1.:	10	)
3/4															2															
1 .														.70	21/2															
11/4														.80	3												1	L	6	5
11/2														.95																
									I	,	is	t		Plus	203	P	(	C												

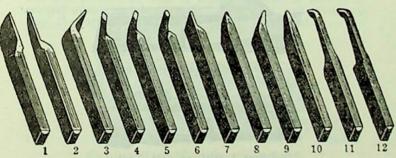
#### (F) CLAMP DOGS.



The under face of screw heads is convex, fitting into a concave seat, and as the holes in upper bar are larger than the screw, this allows considerable tilting without bending the screws

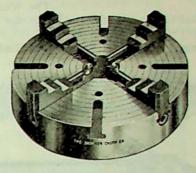
No.	12.	21/4-inch	between	screws.	Price,	each	2.00
No.	13.	23/4-inch	between	screws.	Price,	each	2.50
No.	14.	31/4-inch		screws.	Price,	each	3.50

#### (F) SOUTH BEND LATHE TOOLS.



		4	3	ATT AND	3		Die.			10	
1 2 3 4 5	Rigi Rigi Rigi Lef	ht-Ha ht-Ha ht-Ha Point t -Ha	d Side and Side and Be and D Tool.	nt To	ol. ol. ond	1	7 9 0	Cuttin Bent ' Rough Boring	Nose g-off T Thread ing To Tool. Threa	ool.	rool.
Fo Fo Fo	or 15 or 16 or 18 or 21	inch-inch inch-inch	Lathe Lathe Lathe Lathe Lathe	Per Per Per Per Per	Set Set Set Set	of of of of	12. 12. 12. 12. 12.				. 17.00 . 17.00 . 17.00 . 33.00

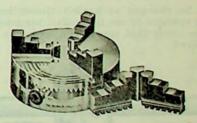
#### (F) INDEPENDENT LATHE CHUCKS.



With four Independent Reversible Jaws, this chuck has four solid jaws with half nut, reversible by running out of chuck at the periphery, and turning end for end. The jaws are hardened, have raised and ground steps. Face of Chuck is ground true to straight edge and is accurately graduated in inches. T slots are furnished only on chucks 12" and larger. All made with hardened steel bearing for the screws. Price, includes wrench:

	Rated Size of	Will Hold	Price
No.	Chuck Inches	About Inches	Each
300	5	7	\$21.00
301	6	71/2	22.00
302	7½	83/4	25.00
3021/2	8	91/2	26.00
303	9	111/2	28.00
304	10	121/2	30.00
305	12	141/2	35.00
306	14	161/2	40.00
307	15	18	43.00
3071/2	16	18	46.00
308	18	21	54.00

#### (F) UNIVERSAL GEARED SCROLL CHUCKS.



With Two Sets of Jaws.

This style chuck is used for holding round pieces. It is strictly a universal chuck, the jaws being moved simultaneously by the scroll-divided plate. Price includes wrench,

		Normal Size	With 2 Sets
No.	THE PERSON NAMED IN	Inches	Jaws
199		3	\$20.00
200		4	22.00
201		5	24.00
203		6	28.00
204		71/2	32.00
205		9	38.00
206		101/2	44.00
207		12	52.00
208		15	70.00
	List Plu	s 102 P. C.	

(F) Goods marked (F) not carried in stock, shipment from factory.

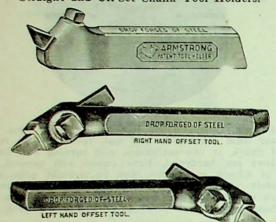
#### (F) ARMSTRONG TOOL HOLDERS.

(Patented.)

#### The World's Standard Lathe and Planer Tools.

A practical and economical system for the use of high speed tool steel. Save all forging and 70 per cent of grinding. Make one pound of tool steel equal to ten pounds in forged tools. Cutters made from stock size and shape of steel.

Straight and Off-Set Shank Tool Holders.



Complete with Wrench and One High Speed Cutter.

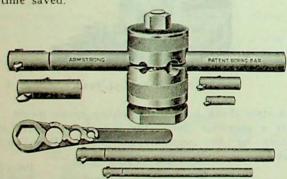
				Size of		Price,
Left	Straight	Right	Sizeof	Cutters,	Extra	Each.
Hand	Shank,	Hand,	Holder,	Inches	Cutters	, Com-
No.	No.	No.	Inches.	Square.	Each.	plete.
00-L	00-S	00-R	16 x 3/4 x 4 1/2	13	\$0.15	\$ 1.80
0-L	0-S	0-R	3/sx7/sx5	1/4	.20	1.90
1-L	1-S	1-R	1/2x11/sx6	Ý	.35	2.15
2-L	2-S	2-R	5/8x13/8x7	3/8	.55	2.70
3-L	3-S	3-R	3/4x15/sx8	76	.90	3.60
4-L	4-S	4-R	7/sx13/4x9	1/2	1.30	4.60
5-L	5-S	5-R	1x2x11	5/8	2.35	6.50
6-L	6-S	6-R	11/4x21/4x13	3/4	3.85	9.00
7-L	7-S	7-R	1½x2½x16		5.85	15.00

3-Bar Boring Tool.

The many points of advantage of this Lathe Attachment will be appreciated by practical machinists.

A slight turn of one nut releases or fastens both Bar and Holder.

Bars can be changed as needed almost instantly, thus allowing the operator to use the stiffest bar possible for each job, with the result that speeds and feeds can be increased and time saved.



The set comprises the Holder and three Boring Bars, with straight and 45 degree and caps, six High Speed Cutters, and

No. of Tool	2-B \$20.00	3-B \$35.00	4-B \$50.00

		Dimensions.		
No. of Tool		2-B	3-B	
Diam. Bars1/2,	3/4, 11/8	is, 18, 1%	3/4, 11/8, 1	11/2 18, 176, 118
Length Bars 8,		9, 13, 18	11, 16, 2	
Size Cutter 16,	1/4, 3/8	ie, ie, ie	1/4, 3/8, 1	/2 10, 10, %
For Lathes 14	to 16	16 to 18	20 to 2	22 24 to 32

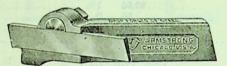
Fitting.-An extra charge of \$1.00 net will be made for

tools ordered fitted to special dimensions.

SELF HARDENING STEEL BLADE

Cutting-Off Tools. Straight and Off-Set Shank.

Straight Tool.



Right-Hand Tool.



Left-Hand Tool.

The cutters are beveled on both sides, and are held on an angle with proper clearance and rake to insure a clean cutting tool.

Price includes Wrench and One High-Speed Cutter.

Left-		Right-	Size	Size		Price,
Hand	Straig	ht Hand	of	of	Extra	Each,
Off-Set	Shank	k, Off-Set	Holder,	Cutters,	Cutters,	Com-
No.	No.	No.	Inches.	Inches.	Each.	plete.
29-L	19	29-R	18 X 3/4	54 X 1/2	\$0.60	\$1.90
30-L	20	30-R	3/8 x 7/8	32 X 5/8	.65	2.00
31-L	21	31-R	1/2 x 1 1/8	1/8 x 3/4	.90	2.40
32-L	22	32-R	5/8 x 13/8	1/8 x 7/8	1.30	3.00
33-L	23	33-R	3/4 x 1 5/8	rex1	2.15	4.00
34-L	24	34-R	7/8×13/4	18 x 1 1/s	2.90	5.00
35-L	25	35-R	1x2	1/4 x 1 1/4	4.00	6.50
36-L	26	36-R	11/4 x 21/4	1/4 x 13/8	4.65	7.75

Side Tools.

The design of Side Tools is typical of the entire System of Tool Holders, embodying the prime needs of a practical lathe tool, viz: Convenience, simplicity and strength.



Offset Right-Hand Side Tool.



Offset Left-Hand Side Tool

Complete with Wrench and One High Speed Cutter

No.	No.	Size	Extra	Price.
Left	Right	of Shank,	Cutters,	The second second second
Hand.	Hand.	Inches.	Each.	Complete
69-L	69-R	16 X 3/4	\$0.60	\$ 1.90
70-L	70-R	3/8 x 7/8	.90	2.25
71-L	71-R	½x1½	1.40	2.90
72-L	72-R	5/8 x 13/8	2.30	4.00
73-L	73-R	3/4 x 15/8	3.40	5.25
74-L	74-R	7/8×13/4	6.00	7.10
75-L	75-R	1x2	6.00	8.50
76-L	76-R	11/4 x 21/4	7.00	11.00

List Net.

#### (F) ARMSTRONG TOOL HOLDERS.

#### Boring Tools.

Require no forging or tempering and very little grinding. They are always ready for use, are very stiff, and will bore close up to a shoulder or bottom.

One Armstrong Boring Tool will take the place of a dozen forged boring tools.

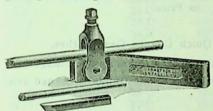


Price includes Holder and Bar, straight and 45 degree End Caps, two High Speed Cutters, and Double Head Wrench.

	Size Shank,	Bar.	Size Cutter, Inches	Extra Cutters,	Price Each,
No.	Inches	Inches	Square	Each	Complete
00B	76 X 3/4	1/2	16	\$0.10	\$3.25
8	3/8 x 7/8	16	r <sup>3</sup> c	.10	3.25
9	1/2×11/4	3/4	1/4	.18	3.85
10	- 5/8×13/8	18	16	.30	5.10
11	3/4 x 15/8	11/8	3/8	.50	7.25
12	7/sx13/4	1 15	1 <sup>7</sup> 6	.75	10.75
13	1 x2	11/2	1/2	1.00	15.00

#### Boring Tool Holders.

This tool will be found very handy in the Tool Room or in boring work of small internal diameter, threading, brass turning, etc. The boring bars furnished are made from the best tool steel, properly hardened, tempered and ground ready for use. The holder is reversible, and can be used for turning either right or left-hand.



Price includes Holder, Wrench, Two Boring Bars and One High Speed Cutter.

	Size of	Size of Bars Furnished,	Size of Square	Extra	Price
No.	Shank, Inches	Diameter,	Cutter.	Cutters,	Each,
15	3/8 x 3/4	Inches 1/s and 1/4	Inches	Each	Complete
16	1/2 X 1		5	\$0.20	\$2.75
	7 74	re and re	16	.35	3.50
17	%x11/4	1/4 and 3/8	3/8	.55	4.50
18	3/4 x 1 1/2	re and re	16	.90	5.75

#### Knurling Tool.

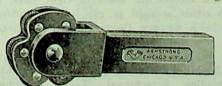
A good Knurling Tool should be self-centering, with as little lost motion as possible, and the knuckle or joint must have ample bearing to resist the severe strains of both end and side thrust. In both of these essentials, as well as in general design and high quality of material and workmanship, the Armstrong Knurling Tool is unexcelled.



No. Size, Inches Complete Per Pair 1-K. 1/2x11/sx61/2 \$4.50 \$0.75

#### Knurling Tool With Revolving Head.

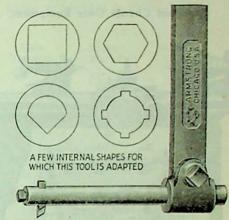
The advantages of this tool are apparent at a glance. The revolving head is fitted with three pairs of knurls, fine, medium and coarse, either of which can be used without the inconvenience and loss of time incident to changing knurls.



No. Size, Inches Complete Per Pair 3-K. \(\frac{1}{2}\x1\f

#### Extension Shaper Tool.

This is an extremely rigid and convenient tool, well adapted for cutting internal key ways, or for any kind of work on the Shaper in which extra clearance is needed.



Price List-Complete With Holder and One Bar, One High Speed Cutter and Wrench.

No.	Size Shank, Inches	Size Bar, Inches	Size Cutter, Inch. Sq.	Extra Cutters, Each	Price, Each, Complete
47	. 1/2x11/s	3/4×10	16	\$0.24	\$3.00
48	. 3/8×13/8	18x12	3/8	.40	3.75
19	. 3/4 x 1 1/8	11/sx14	Te	.55	5.25

#### PLANER TOOL.

Costs less than a High Speed Forged Tool. Effectively, it equals a dozen.

Complete with one Wrench and High Speed Cutter.

No.	Size of Holder, Inches	Size of Cutter. Inches	Extra Cutters Each	
40	1/2x1 x 7	1/4x 3/8	\$ .35	\$ 3.10
401	5/8x11/4x 81/2	is x is	.55	4 00
41	3/4x11/2x10	3/8x 1/2	.80	5.25
42	11/sx13/4x13	1/2x 3/4	1.95	8.25
43	13/sx2 x16	%x 3/s	3.35	12.75
44	17/sx21/4x19	3/4×1	5.00	19.50
45	21/sx23/4x22	7/8×11/8	8.20	30.00

#### THREADING TOOLS.

Simplicity, Strength and Permanence of Adjustment are prominent features of this Tool.



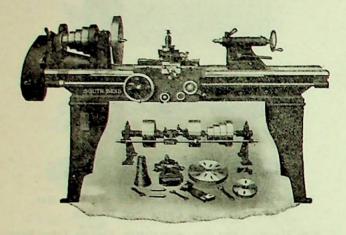
Each Tool is equipped with one single point cutter V, U. S. or Whitworth Standard, and a drop-forged wrench.

No.			Size of Holder, Inches	Carbon Steel Cutter	High Speed Cutter
00T	Each	complete,	1 x 3/4 x 5	\$2.25	\$2.75
50	Each	complete.	%x 7/8x 5	2.25	2.75
51		complete.	1/2x11/8x 6	2.75	3.35
52		complete,	%x1%x 7	3.50	4.25
53	Each	complete,	3/4x15/8x S	4.50	5.50
54	Each	complete,	3/8x13/4x 9	5.50	6.50
55	Each	complete,	1 x2 x10	7.00	8.25
			List Net		

(F) Goods marked (F) not carried in stock, shipment from factory.

#### (F) SOUTH BEND SCREW CUTTING ENGINE LATHES.

SOUTH BEND LATHES.
Standard Change Gear Equipment.



Regular Equipment, as Illustrated under Lathe, Is Included in Price.

#### Description of Standard Change Gear Lathes.

Bed is rigid, cross-ribbed by heavy box braces, cast in at short intervals its entire length; has three V's and one flat way for guiding the head-stock, tail stock and carriage. The rack attached is of steel, cut from the solid bar.

Head-Stock is equipped with improved reverse. Hollow spindle is of special spindle steel, accurately ground. Bearings are the best phosphor bronze with ample oiling facilities and are adjustable for wear.

Tail-Stock is off-set to allow compound rest to swivel parallel to bed and is provided with set-over for turning taper. Tail-stock center is self-ejecting.

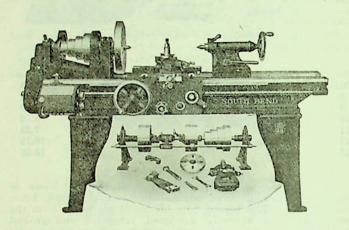
Carriage is strong, with wide, deep bridge; has T slots for clamping work for milling and boring. Both automatic crossfeed, and automatic longitudinal feed are operated from the front of apron and but one feed at a time can be engaged. Both feeds are driven by a splined screw and worm so that the thread of lead screw is used for thread-cutting only.

Graduation. The compound rest is graduated in 180 degrees. The cross-feed screw has micrometer graduated collar reading in one-thousandth of an inch.

Equipment, as shown in above cut, is included in the price of Lathe, and consists of large and small face plates, graduated compound rest, follower rest (not included on 9 and 11-inch lathes), adjustable stop for screw-cutting, set of feed gears, semi-machined chuck-back, gear-guards, necessary wrenches and double-friction countershaft.

SOUTH BEND LATHES.

Ouick Change Gear Equipment.



Regular Equipment, as Illustrated under Lathe, Is Included in Price.

#### Description of Quick Change Gear Lathes.

The description and dimensions of the quick change gear lathes are the same as those of the Standard change gear Lathes.

Forty-eight threads of different pitch can be cut with this Quick Change Gear Box without changing a gear, as follows: 2,  $2\frac{1}{4}$ ,  $2\frac{1}{2}$ ,  $2\frac{3}{4}$ ,  $2\frac{7}{8}$ , 3,  $3\frac{1}{4}$ ,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$ ,  $5\frac{3}{4}$ , 6,  $6\frac{1}{2}$ , 7, 8, 9, 10, 11,  $11\frac{1}{2}$ , 12, 13, 14, 16, 18, 20, 22, 23, 24, 26, 28, 32, 36, 40, 44, 46, 48, 52, 56, 64, 72, 80, 88, 92, 96, 104 and 112 per inch.

If threads other than the ones enumerated above are to be cut, the addition of one gear will allow another series of 48 threads to be cut. All Turning Feeds can be obtained instantly without changing a gear.

The "South Bend" Quick Change Gear Box (Flather patent) is a simple, accurate and reliable Quick Change Gear mechanism that has been used for years on some of the most modern type toolroom lathes in this country. It covers a wide range of thread cutting and turning feeds. The gears are made of steel forgings with wide face and coarse pitch and are protected in this box from grit and dirt.

South Bend Lathes are made in eight sizes, 9" to 24" swing, with either straight or gap beds, Standard Change Gears or Quick Change Gears. See tabulation on next page.

Attachments: South Bend Lathes may be supplied at extra cost with-Milling and Key-Way Cutting Attachment, Draw-in Chuck Attachment, Silent Chain Motor Drive Attachment, Grinding Attachment, Taper Attachment, Oil Pan, etc.

#### (F) SOUTH BEND SCREW CUTTING ENGINE LATHES.

Standard Change Gear or Quick Change Gear.

Equipped with Automatic Longitudinal Feed, Automatic Cross Feed and Compound Rest.

Regular Equipment, as Illustrated Under Cut of Lathe, is Included in Price.

Number Quick Change Gear Lathe	Number Standard Change Gear Lathe	Swing Over Bed	Length Over Bed	Distance Between Centers	Hole Through Spindle	Approx. Weight on Skids Crated	Price Standard Change Gear Lathe	Price Quick Change Gear Lathe
		9-in. S	tandard and	Quick Change	Gear Lathes.			
61-X	25-X .25Y .25-A	9¼ in. 9¼ in 9¼ in.	2½ ft. 3 ft. 4 ft.	12 in. 18 in 30 in.	3/4 in 3/1 in 3/4 in.	460 500	\$ 147.00 . 150.00 157.00	\$ 186.00 . 189.00 . 196.00
		11-in. S	standard and	Quick Change	Gear Lathes.	sear legisla		
63-Y	27-Y .27-A .27-B	11¼ in. .11¼ in 11¼ in.			⅓ in. ⅓ in ⅓ in	575 625 675	\$ 187.00 . 194.00 204.00	\$ 226.00 . 233.00 . 243.00
		12 in 6	tandard and	Quick Change	Gaar Lather	Aller Services		
or Albania Vanda and	24.4							
65-A	34-A .34-B .	13¼ in. .13¼ in.	5 ft	18 in. 30 in	1 in.	950	\$ 249.00 . 259.00	\$ 291.00
65-C	34-C 34-D	13¼ in. .13¼ in.	6 ft	42 in. 54 in	1 in.	1050	269.00	311.00
65-D 65-E	34-E	13¼ in.	8 ft.	66 in.	1 in 1 in.	1100	. 279.00 293.00	321.00
		15 in C	tandard and	Quiels Change	Coor Tother			
or b	0 70			Quick Change				
67-B	37-B 37-C	15¼ in. .15¼ in	5 ft.	27 in. 39 in	11/s in. 11/s in	1350	\$ 306.00 . 320.00	\$ 353.00 367.00
67-D	37-D	15¼ in.	7 ft.	51 in.	11/s in.	1500	334.00	381.00
67-E	37-E 37-G	.15¼ in 15¼ in.	8 ft 10 ft.		11/s in 11/s in.	1900	378.00	394.00 425.00
		16:- C		Ouish Channe	Car Yathan			
tion, has street less				Quick Change	ri sosmio m #1			
68-C	40-C 40-D	16¼ in. .16¼ in	6 ft.	36 in. 48 in	1 fs in.	1700	\$ 357.00	\$ 408.00 . 422.00
68-E	40-E	16¼ in.	8 ft.	60 in.	1 if in.	1825	385.00	436.00
68-G 68-H	40-G 40-H	.16¼ in	10 ft 12 ft.	84 in 108 in.	. lis in	2025	. 418.00 453.00	. 463.00 504.00
could have			tandard and	Quick Change	Gear Lathes.			
71-C	45-C 45-D .	18¼ in. .18¼ in	6 ft.	31 in. 43 in	1% in. . 1% in	2250 2325	\$ 494.00 . 512.00	\$ 552.00
71-D	45-E	18¼ in.	8 ft.	55 in.	1% in.	2450	530.00	588.00
71-G	45-G 45-H	.18¼ in 18¼ in.	10 ft 12 ft.	79 in 103 in.	. 1% in 1% in.	2550 2750	591.00 645.00	. 649.00 703.00
71-11	10-11	10/4 III.	12 10.	100 111.	175 111.	2100	030.00	103.00
		21-in. St	andard and	Quick Change	Gear Lathes.			
73-D	47-D	21¼ in.	7 ft.	39 in.	1½ in.	2875	\$ 686.00	\$ 760.00
73-E 73-G	47-E . 47-G	.21¼ in 21¼ in.	8 ft 10 ft.	51 in 75 in.	1½ in	3325	710.00 757.00	. 784.00 831.00
73-H	47-H .	.21¼ in	12 ft	99 in	. 1½ in	3750	. 837.00	. 905.00
73-K	47-K	21¼ in.	14 ft.	123 in.	1½ in.	4021	890.00	964.00
		24-in. St	andard and	Quick Change	Gear Lathes.			
75-E	54-E	24¼ in.	8 ft.	46 in.	1¾ in.	3975	\$ 927.00	\$1016.00
75-G 75-H	54-G 54-H	.24¼ in 24¼ in.	10 ft 12 ft.	70 in 94 in.	. 1¾ in	4725	. 982.00	. 1071.00
75-K	54-K	241/4 in	14 ft	.118 in	. 1% in	.5150	. 1129.00	. 1218.00.
75M	54-M	24¼ in.	16 ft.	142 in.	1¾ in.	5385	1192.00	1281.00

EXTRAS—The South Bend Lathe may be supplied at extra cost with Milling, and Key-Way Cutting Attachments Draw-in Chuck Attachment, Silent Chain Motor Drive Attachment, Grinding Attachment, Taper Attachment, Oil Pan, etc.

List Net.

(F) SEMI-MACHINE CHUCK PLATES.

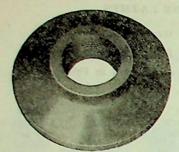


Fig. 301.

Shows a cast iron semi-machined chuck plate; semimachined because it has been bored, faced, and threaded to fit the spindle nose of various sizes of South Bend Lathes.

#### Price of Semi-Machined Chuck Plate and Fitting Chuck to Lathe.

The price of the semi-machined chuck plate, and the fitting of chuck to lathe, complete, is not included in the price of the lathe or chuck, but is extra, as shown herewith: Size of Lathe, Inches.... 13 15 18 21 24 Price, Semi-Machined

Chuck Plate ....... \$2.50 \$2.75 \$3.50 \$4.00 \$5.00 Price, Fitting Chucks

to Lathes, including

S. M. Chuck Plate... 5.00 6.00 8.00 9.00 10.00 Size of Chucks for a Lathe.

Size of Lathe Chuck most practical for South Bend Lathes, viz.:

13-in. Lathes 5-in. to 9-in. chuck inclusive
15-in. Lathe 6-in. to 10-in. chuck inclusive
16-in. Lathe 6-in. to 12-in. chuck inclusive
18-in. Lathe 8-in. to 14-in. chuck inclusive
21-in. Lathe 10-in. to 15-in. chuck inclusive
24-in. Lathe 12-in. to 18-in. chuck inclusive
List Net.

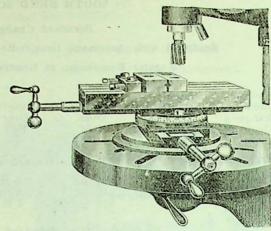
#### REX HIGH SPEED TOOL STEEL.



Tool Holder Bets.

The above lengths (with 30-degree bevel on each end) will be furnished unless otherwise specified.

(F) DAVIS MILLING ATTACHMENTS.



For the Drill Press.

The Davis Milling Attachment is invaluable to any shop, large or small. In the big shop, no matter if you have a dozen large millers, it will come handy when they are tied up with work for milling of ends of bosses, spotting castings, etc. It cuts keyseats, straight or taper, cuts the "Woodruff" or half moon keyseats perfectly, mills deep grooves or slots, cuts clutch jaws and mills cams.

Cutters are regular stock sizes. You do not have to buy special or expensive tools, as all the twist drill and cutter makers make and carry in stock end mills, right hand cut, and with standard taper shanks, to fit drill press spindles.

Each attachment is furnished with a substantial vise for holding the work.

#### Dimensions.

Circular base 121/2 inches diameter

Table is 6½ inches wide, 16½ inches long; has three tee slots one-half inch wide.

Cross slide movement 7 inches.

Longitudinal movement 12 inches.

#### DRILLS AND COUNTERSINKS COMBINED.



No. 98. For Lathe Work.

	Diameter of	Diameter of	Price,
Size.	Body.	Drills.	per doz.
C-2	13 inch	is inch	\$2.25
	302		
E-2	302	3 inch	2.75
D-1	15 inch	No. 49	2.50
	if inch		
F-2		is inch	3.50
	256 P	C	

(F) Goods marked (F) not carried in stock, shipment from factory.

#### SOUTH BEND MILLING AND KEY-WAY CUTTING ATTACHMENTS.

For Standard and Quick Change Gear Lathes.

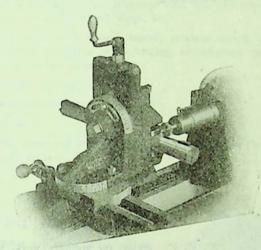
This attachment is practical in the shop because it equips the lathe for doing the 101 jobs that otherwise could be done only on the shaper or milling machine.

The regular equipment consists of Milling Attachment two steel V Blocks, one crank handle, one double end wrench,

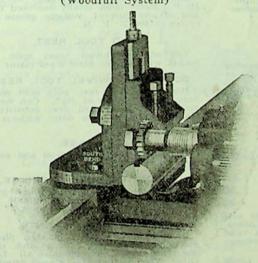
and two bolts and nuts for attaching.

Size of Attachment	No. 1	No. 2	No. 3	No. 4	No. 5	No. 51/2	No. 6	No. 7
Size of Lathe	9"	11"	13"	15"	16"	18"	21"	24
Vertical Feed	21/2"	3"	5"	6"	7"	7"	8"	10"
Cross Feed	3"	4"	8"	11	11"	14"	15"	20"
Vise will hold	11/2"	11/2"	23/4"	31/2"	4"	4"	41/2"	5"
Depth of Jaws	1"	1"	15/8"	13/4"	2"	2"	21/4"	21/2"
Width of Base	31/4"	37/8"	5"	51/2"	6"	61/2"	71/2"	8"
Width of Jaws	3"	31/2"	5"	51/2"	6"	6" .	71/2"	8"
Weight, lbs	25	30	40	50	65	75	80	100
Price	\$36	\$40	\$45	\$50	\$55	\$65	\$80	\$90

List Net.



Milling a Key-Way (Woodruff System)



Milling a Key-Way on the Lathe

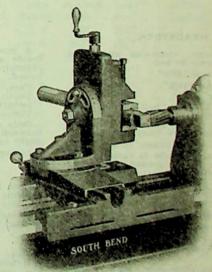
(F) MILLING ARBOR FOR LATHES.



Fig. G.

The illustrations show improved Milling and Key-Way Cutting Attachment fitted to the carriage of a 15-inch South Bend Lathe. The illustrations shown are of the No. 4 attachment, same size on three different jobs.

The depth of the cut is controlled by the feed of the carriage, the length by the cross feed screw, and the graduated screw at the top takes care of the vertical motion. The attachment swivels all the way around like the compound rest, and is graduated in degrees. In addition it swivels on the upright angle plate 180 degrees and is graduated. There is a graduated collar on the vertical screw reading in one-thousandths of an



Squaring a Steel Shaft on Lathe

The cut shows Arbor used in the lathe for holding cutters. These Arbors are made in three sizes, 4-inch, 7/s-inch and 1-inch in diameter, capacity between shoulder and nut 1%-inch. The 1-inch arbor is the most practical, as most cutters have a 1-inch hole.

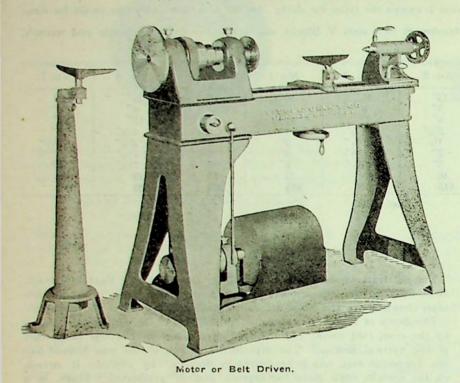
In ordering, specify both the diameter of arbor and the aper of shank. The price of the arbor is not included in taper of shank. 

Price of Arbor No. 4 Taper for 21", 24" Lathe...... 10.00

List Plus 204 P. C.

(F) Goods marked (F) not carried in stock: shipment from factory.

#### F LITTLE GIANT BALL BEARING WOOD LATHES



Comp'etely equipped with SKF Self-aligning Ball Bearings. The motor unit is likewise equipped and also has safety Fuse Box, which positively prevents damage to motor by overloading.

#### SPECIFICATIONS

#### HEADSTOCK.

Special design, clean-cut and rigid, fastened securely to bed.

Length at base, 131/2".

Width at base, 10%".

Height over all, 9".

Bearings, 4 SKF Self-aligning Ball Bearings, with hardened inner and outer s'eeves, and 2 Ball Thrust Bearings to take care of pressure from both ends.

Distance, floor to center of head, 42". The headstock spindle is made of alloy steel, hardened and ground to size; is hollow and will not heat; both ends are threaded for face plates, chucks, etc.

Length, 1732"

Diameter, 114".

Hole through spindle, %". Center Morse Taper, No. 2.

Speeds, R. P. M. 600, 1080, 1800, 3000. Four-step cone, diameters, 3", 4", 5",

Belt face on each cone, 1%".

Width of belt, 11/2".

Front face plate, diameter, 6".

Rear face plate, diameter, 10".

#### TAIL STOCK.

Special open design, clamped firmly to bed by hand lever. Center is removed by backing up screw. Is furnished with set-over device for taper work, if shipped with lathes equipped with carriage.

Length at base, 7". Width at base, 7". Height over all, 8". Length of spindle, 7%".

Diameter of spindle, 114".

Travel of spindle. 4". Center Morse Taper, No. 2.

#### BED.

A cored casting. Top is planed flat. Inside and outside edges are machined. Strongly ribbed and heavily cross-sectioned.

Face, or width, 7". Depth, or thickness, 6%". Length over all, 48".

Distance between centers, 25".

Beds of greater lengths, or distances between centers, can be furnished at slight extra cost.

Distance from floor to top of bed, 36".

#### CAPACITY.

Rear face p'ate, 80". Swing over bed, 12". Swing over tool rest, 10".

Swing over bed can be increased to 20"

#### GENERAL.

Floor space, 24"x50". Height over all, 46".

at slight extra cost.

The foregoing apply to both motor and Belt Driven Little Giant Wood Lathes. With the latter we can furnish a two-speed counter shaft which gives the operator choice of eight speeds.

For individual Motor Driven Little Giant Wood Lathes, the following addi-tional specifications will apply

#### MOTOR UNIT HEADSTOCK.

Heavy cross section, mounted on three points.

Width, 5½",
Length, 11½".
Motor extension bracket.
Width, 10",
Length, 12".
Shaft Diameter, 1½".
Bearings, 2 SKF Self-aligning Ball
Bearings, with hardened inner and outer
sleeves. Four-step cone, diameters, 2",

3", 4", 5". Motor, for ordinary work, 1/2

Motor, for heavy and steady work, % H. P. Motor is of totally enclosed type, and of any current, voltage, phase and cycles. 1800 R. P. M.

#### HAND TOOL REST.

Top edge machined true; split rest socket with strong hand level clamp.

#### COMPOUND SWIVEL TOOL REST.

Has slotted tool rest, with split socket base, and traverse of 3½". Can be re-moved and hand tool rest substituted. Hand turning can be done without removing carriage.

#### CARRIAGE.

Hand feed, with cross feed and swivel

#### AUTOMATIC FEE,D CARRIAGE.

Driven by lead screw, through gears from rear end of head stock spindle, Has all combinations from 1/48" to 1/3".

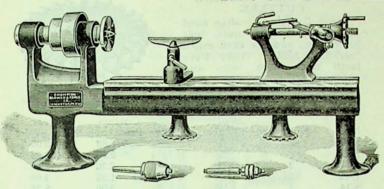
#### OTHER ATTACHMENTS.

Band saw, saw table, jointer, planer, morticing, sanding, buffing and other wood working equipment. All Little Giant Wood Lathes are shipped fitted for such equipment, which can be bought at any future time, and installed quickly and easily.

Belt Driven Combination Metal and Wood Lathes with bench legs 6" high, 25" centers, 48" bed and other specifications as shown including tool rest and head stock spindle with rear extension including cap, ready to run...\$140.00

The above outfit with floor legs.. 165.00 The above outfit in motor driven type with floor legs including 1 H. P. 600 R. P. M. motor of any specifications complete ready to run including drive belt \$325.00

#### LANCASTER BALL BEARING BENCH LATHES.



The best all-around light three-speed ball-bearing lathe for general utility and garage use, adapted for such work as turning commutators, magneto and speedometer work, polishing and other small work, etc.

Equipped with Chuck taking straight shank drills up to 1/2"; also complete with buffing attachment to hold felt, wire or emery wheels.

Length of bed 24".

Distance between centers 12".

Swing 7".

Lathe complete with Chuck, Arbor and Face Plate as illustrated ......\$36.00

List Net.

#### METAL SLITTING SAWS.

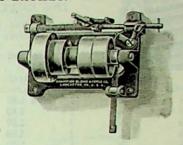
These are thin Milling Cutters. They are ground on the sides and left a little thicker at the outer edge than near the center, to give a proper clearance in cutting deep slots.

In ordering Special Saws, please state for what purpose they are required.



					Price.
				Price,	High
	700.0			Carbon	Speed
21.00	Diam-	Thick-		Steel	Steel
No.	eter.	ness.		Cutter.	Cutter.
G-70	. 5"	32"	1	\$1.50	\$3.35
G-71	. 5"	1/8"	1	1.50	3.35
G-72	. 5"	1/8"	11/4	1.50	3.35
G-73	. 5"	1/8"	11/2	1.50	3.35
G-74	. 5"	32"	1	1.90	4.30
G-75	5"	78"	1	2.30	4.30
G-77	. 6"	32"	1	3.00	5.85
G-78	6"	1/8"	1	2.70	5.35
G-78A	. 6" 8	1/8"	11/4	2.70	5.35
G-79	6" 88 8	78"	11/2	3.50	6.45
G-79A	6"	18"	13/4.	3.50	6.45
G-80	6"	16"	1	3.50	6.45
G-82	7" 25.71	33"	- 1	4.50	8.35
G-83	7" 88.81	1/8"	1	3.80	7.20
G-83A	7"00.88	1ª"	11/4	5.10	9.05
G-83B	7"	10"	11/2	5.10	9.05
APPLICATION .					

Carbon Steel, List. High Speed, Market.



Countershaft as shown above......\$12.00

1/8 H. P. Motor will run this lathe, as it is equipped with adjustable ball-bearings.

List Net.



#### SCREW SLOTTING CUTTERS.

These Cutters have a fine pitch of teeth, especially adapted for the slotting of screw heads and similar work.

They are not ground on

Cutters 23/4 inches diameter have 72 teeth, 21/4 inches diameter 60 teeth, and 1% inches diameter 90 teeth.

	Diam.	Gauge	Thick-			
	of Screw	No.	ness of	Diam.		Carbon
	Head	Amer-	Cutter	of	Size	Steel
	to be	ican	in Deci-		of Hole	Price,
	Slotted.	Stand.	mals.	ter.	Inches.	Each.
H-10,		5	.182"	23/4"	1"	\$0.70
H-11,	11/s"	6	.162"	2¾"	1"	.60
H-12,		7	.144"	23/4"	1"	.50
H-13,	7/s"	8	.128"	23/4"	3/4 & 1"	.45
H-14,	34-13"	9	.114"	23/4"	3/4 & 1"	.40
H-15,	5/8"	10	.102"	23/4"	3/4 & 1"	.35
H-16,		11	.091"	23/4"	3/4 & 1"	.30
H-17,	1/2-18"	12	.081"	23/4"	3/4 & 1"	.25
H-18,		13	.072"	23/4"	3/4 & 1"	20
H-19,	3/8-17"	14	.064"	23/4"	1/2, 5/8, 3/4 & 1"	.20
H-20,	33"	15	.057"	23/4"	1/2. 5%. 3/4 & 1"	.15
H-21,	16"	16	.051"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-22,		17	.045"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-23,	1/4-32"	18	.040"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-24,	16-32"	19	.035"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-25,		20	.032"	234"	1/2, 5%, 3/4 & 1"	.15
H-26,	1/8"	21	.028"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-27,	1/8"	22	.025"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-28,		23	.023"	23/4"	1/2, 3/8, 3/4 & 1"	.15
H-29,		24	.020"	23/4"	1/2, 5/8, 3/4 & 1"	15
H-30,		25	.018"	23/4"	1/2. %, 3/4 & 1"	.15
H-31,		26	.016"	23/4"	1/2. 5/8, 3/4 & 1"	.15
H-32,		27	.014"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-33,		28	.012"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-34,		30	.010"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-35,		32	.008"	23/4"	1/2, 5/8, 3/4 & 1"	.15
H-36,		34	.006"	23/4"	1/2, %, 3/4 & 1"	.15
H-36A		10	.102"	21/4"	%"	.30
H-36B		11	.091"	21/4"	%"	.25
H-36C		12	.081"	21/4"	%"	.20
H-36D		13	.072"	214"	%"	.15
H-36E		14	.064"	21/4"	5%"	.15
0.1.6	1	9.00	Lis		-	



# BROWN & SHARPE MILL-ING CUTTERS.

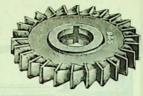
Cutters of less than %-inch ace have straight teeth.

			face have	e straight	teeth.
1				Carbon	High Speed
		- Lui		Steel	Steel
No.	Diameter.	Width o Face.	Hole.	Cutters. Price, each	Cutters.
M-14	21/2	16	1	\$ 1.30	\$ 2.10
M-15	2½ 2½ 2½ 2½	1/4 1 <sup>5</sup>	1	1.40	2.30
M-16 M-17	2½ 2½	16 3/8	1	1.50 1.60	2.55 2.65
M-18	21/2	16	1	1.70	2.80
M-19	21/2	1/2	1	1.80	3.00
M-20	21/2	16	1	1.90	3.20 3.45
M-21 M-22	2½ 2½ 2½	% 11	1	2.00 2.10	3.55
M-23	21/2	3/4	1	2.20	3.80
M-24	21/2	18	1	2.30	4.00
M-25 M-26	2½ 2½	7/s 1	1	2.40 2.60	4.15 4.55
M-27	21/2	11/8	1	2.75	4.85
M-28	21/2	11/4	1	2.90	5.15
M-29	21/2	11/2	1	3.10	5.65 6.30
M-30 M-31	2½ 2½	13/4	1	3.40 3.70	6.90
M-32	21/2	21/4	î	3.90	7.35
M-33	21/2	2½ 2¾	1	4.10	7.85
M-34 M-35	2½ 2½	3	1 1	4.25 4.50	8.20 8.80
M-36	21/2	31/2	1	5.00	9.90
M-37	21/2	4	1	5.50	11.00
M-61	3	16	1 1	1.35	2.35 2.75
M-62 M-63	3	1/4	1	1.60 1.85	3.20
M-63A	3 3 3	3/8	. 1	2.10	3.55
M-64	3	3/8	11/4	2.10	3.55
M-65 M-66	3	16	11/4 11/4	2.25 2.40	3.85 4.10
M-67	3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	1/2 16	11/4	2.55	4.40
M-68	3	5/s 11	1¼ 1¼	2.70	4.70
M-69	3	16	11/4	2.85	4.95
M-70 M-71	3	3/4 7/8	11/4	3.00 3.30	5.20 5.75
M-72	3	1	11/4	3.60	6.35
M-73	3	11/4	11/4 11/4	4.00	7.20
M-74 M-75	3	1½ 1¾	11/4	4.30 4.50	7.85 8.45
M-76	3	2	11/4	4.70	9.00
M-77	3	2 21/2	11/4	5.20	10.35
M-78	3	3 31/2	11/4 11/4	5.40 5.90	11.20 12.50
M-79 M-80	3	4	11/4	6.40	13.80
M-104A	4	1/4	1	2.00	3.80
M-104B	4	Te Te	1	2.50 3.00	4.55 5.35
M-104C M-105	4	1/4	11/4	2.00	3.80
M-106	4	1/4 16	11/4	2.50	4.55
M-107	4	3/8	11/4 11/4	3.00	5.35
M-108	4 4	176 1/2	11/4	3.50 3.90	6.15 6.85
M-109 M-110	4	1/2 1/2 1/2 16	11/2	3.90	6.85
M-111	4	re re	11/2	4.10	7.25
M-112	4	%	11/4	4.30 4.50	7.65 8.05
M-113 M-114	4 4	18 3/4	11/4	4.70	8.45
M-115	4	3/4	11/4 11/2	4.70	8.45
M-116	4	7/8	11/4	5.15	9.30
M-117	4	1	11/4	5.65 5.65	10.25 10.25
M-118 M-119	4 4	11/4	11/4	6.25	11.60
M-120	4	11/4	11/2	6.25	11.60
M-121	4	$\frac{1^{1/2}}{1^{1/2}}$	11/4	6.65	12.70
M-122	4	13/2	1½ 1¼	6.65 7.05	12.75 13.70
M-123 M-124	4	13/4	11/2	7.05	13.70
M-125	4	2 2	11/4	7.45	14.85
M-126	4	2	11/2	7.45 8.40	14.85 17.20
M-127 M-128	4	21/2	11/4 11/4	9.00	19.10
M-128A	4	3	11/2	9.00	19.10
	-			Carbon	Steel, List.

Carbon Steel, List.

# B. & S. SIDE MILLING CUTTERS.

These Cutters are often used in pairs for sizing nuts, bolt heads, etc., and are then called "Straddle Mills." They have teeth upon both sides and



edges.				المسالم	
Other	sides may	be ordered.		Carbon	IT:ah Casad
		Width		Steel	High Speed Steel
		of		Cutters.	Cutters.
No.	Diameter.	Face.	Hole.	Price, each.	
S-10		13g	1/2	\$ 1.85	\$ 3.05
S-11	2 2 2 2 2 2 2 2 2 2 2 2	1/4	1/2	2.00	3.25
S-12	2	3/s 136	1/2 5/8	2.20	3.55
S-13	2	130	5/8	1.85	3.05
S-14	2	1/4 3/s	5/8	2.00	3.25
S-15	2	3/8	5/8	2.20	3.55
S-16	21/2	1/4	7/s 7/s	2.20	3.30
S-17 S-18	2½ 2½	7'c 3/s	7/s	2.30 2.45	3.60 3.70
S-19	21/2	78	7/8	2.55	3.85
S-20	21/2	1/2	7/8	2.65	4.10
S-21	23/4	1/2 1/4	7/8	2.30	3.55
S-22	23/4	re	7/8	2.50	3.80
S-23	23/4	3/8	7/8	2.65	4.00
S-24	23/4	16	7/8	2.75	4.35
S-24A	23/4	16	1	2.75	4.35
S-25	23/4	1/2 1/2 1/2	7/8	2.80	4.45
S-25A	23/4	1/2	1	2.80	4.45
S-26	3	1/4	1	2.45	3.85
S-27 S-28	3	7°5 3/8	1	2.75 3.00	4.35 4.75
S-28A	3	3/8	11/4	3.00	4.75
S-29	3	16	1	3.20	5.10
S-30	3	1/2	î	3.35	5.40
S-30A	3	1/2 1/2 10	11/4	3.35	5.40
S-31	31/2	. 7c	1	3.75	5.75
S-32	31/2	1/2	1	4.20	6.95
S-32A	$\frac{3\frac{1}{2}}{3\frac{1}{2}}$	1/2 1°c	11/4	4.20	6.95
S-33	31/2	16	1	4.55	7.65
S-34	31/2	5/8	1	4.55	7.65
S-34A	4	1/4 3/8	1	2.90	5.05
S-34B S-34C	4	3/8	1 11/4	4.05 4.05	6.85 6.85
S-35	4	1/8	1	5.10	8.55
S-35 A	4	1/2 1/2	11/4	5.10	8.55
S-36	4	5/0	1	5.55	9.45
S-37	4	5/8	7/8	5.55	9.45
S-38	4	5/8 5/8	11/4	5.55	9.45
S-39	4	%	1	6.00	10.40
S-39A	4	3/4	11/4	6.00	10.40
S-40	4	7/8	1	6.50	11.35
S-40A	4	7/8 1/2	11/4	6.50	11.35 9.80
S-40B S-40C	5	1/2	1 11/4	5.30 5.30	9.80
S-40C	5	1/2 3/4	1	6.35	12.45
S-42	5	3/4	11/4	6.35	12.45
S-42A	5	5/8	1	5.75	11.00
S-42B	5	5/8	11/4	5.75	11.00
S-43	5	7/8	1	6.90	13.65
S-43A	5 5 5 5	7/8	11/4	6.90	13.65
S-44	5	1	1	7.80	15.05
S-44A	5	1	11/4	7.80	15.05
S-44B	6	1/2	1	6.70	12.25
S-44C	6	1/2 5/8	11/4	6.70	12.25
S-44D	6	3/8	11/4	7.15	13.80 15.35
S-45 A	6	3/4 3/4	11/4	7.60 7.60	15.35
S-46	6	18	11/4	8.65	18.55
S-47	6	18	11/2	8.65	18.55
S-47A	6	1	1	8.65	18.55
S-47B	6	1	11/4	8.65	18.55
S-47C	7	374	11/4	13.80	23.85
S-48	7 7 7	1	11/4	16.10	28.95
S-49	7	11/8	11/4	17.25	31.55
S-50	8 8 8	1	11/4	19.55	37.30
S-51	8	13/8	11/4	23.00	46.65
S-52	8	13/8	11/2	23.00	46.65
S-53	8	13/8	13/4	23.00	46.65
S-54	8	13/8	2	23.00	46.65
riigh S	peed, Mark	et.			

#### ELECTRIC MOTORS

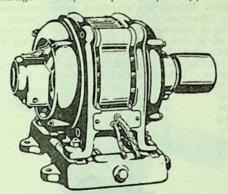
#### GENERAL NOTES AND INSTRUCTIONS.

Prices, in all instances, cover complete Motor, that is, with base and pulley. All Direct Current Motors, except 1/4 H. P. size, require Starting Rheostat, included with above prices.

To make your order intelligible and easily handled, always obtain voltage, cycle and phase of current, unless it is

direct.

If 115 volts Direct Current is wanted, use 230 volt price, and mark your order accordingly. Other ratings and special prices upon application.

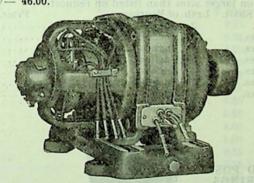


Alternating Current—60 Cycle.
3 and 2 Phase Squirrel Cage Type.

H.P.	Speed	Volt	Pulley	Price
†1/2	1800	110	3½x2	\$ 44.00
3/4	1800	110-220-440-550	3½x2	54.00
1	1800	110-220-440-550	3½x2	56.00
11/2	1800	110-220-440-550	4½x3	60.00
2	1800	110-220-440-550	4½x3	66.00
3	1800	110-220-440-550	4½x3	75.00
5	1800	220-440-550	4½x4	87.00
*71/2	1800	220-440-550	5½x4½	182.00
*10	1800 .	220-440-550	7 x5	207.00

\*71/2 H. P. and above includes starting compensator.

†220-V—\$44.00. †440-V— 46.00.



Single Phase-60 Cycle. Repulsion Induction Type.

110-220

1800

Repulsion Induction Type.					
H. P.	Speed	Volt	Pulley	Price	
1/4	1700	110-220	21/2×11/4	\$ 43.00	
1/4 1/2	1700	110-220	21/2×11/4	55.00	
3/4	1700	110-220	31/2×2	64.00	
1	1800	110-220	4½x3	78.00	
11/2	1800	110-220	41/2×3	97.00	
2	1800	110-220	4½x3	112.00	
2	1800	110-220	41/6x3	132.0	

41/2×4

173.00 71/2 1500 110-220-440-550

H. P.

2

3

Speed

1500

1500

1500

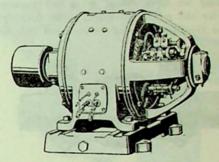
1500

1500

1500

	Single Phase	25 Cycle Repulsion	Induction	Type.
H. P	Speed	Volt	Pulley	Price
1/2	1500	110-220	31/2x2	*\$ 72.00
1	1500	110-220	41/2x3	112.00
11/2	1500	110 220	41/2x3	127.00
2	1500	110-220	41/2×3	147.00
3	1500	110-220	41/2×4	193 00
5	1500	110-200	53/2×4	262.00

<sup>\*</sup>No base required; motor has slotted feet. List Net



Direct Current. Shunt Wound.

		Shunt wou	nu.	
H. P.	Speed	Volt	Pulley	Price
*1/4	1700	230	2½x1½	\$ 29.00
1/2	1700	230	3½x2	43.00
3/4	1700	230	3½x2	59.00
1	1700	230	3½x2	78.00
11/2	1700	230	4½x3	88.00
2	1700	230	4½x3	98.00
3	1700	230	4½x3	131.00
- 5	1700	230	4½x4	173.00
71/2	1700	230	5½x4½	209.00
10	1700	230	7 x5	252.00

\*Starter not included. Included and necessary on larger sizes.

#### KT. & KQ. 3 and 2 Phase 25-Cycle Motors.

H. P.	. Speed	Volt	Pulley	Price
1/4	750	110-220-440-550	31/2x2	\$ 56.00
1/2	750	110-220-440-550	31/2x2	68.00
3/4	750	110-220-440-550	41/2×3	72.00
1	750	110-220-440-550	4½x3	79.00
2	750	110-220-440-550	41/2×4	89.00
3	750	110-220-440 550	51/2×41/2	114.00
5	750	220-440-550	7 x5	141.00
71/2	750	220-440-550	8 x6	*267.00
10	750	220-440-550	8 x7	*306.00

\*Price includes compensator, base and pulley; all other prices base and pulley only.

KT. & KQ. 3 and 2 Phase 25 Cycle Motor.

Volt

220

220

110-220-440-550

110-220-440-550

110-220-440-550

110-220-440-550

Pulley

2½x1½ 3½x2

41/2x2

41/2x3

41/2×4

51/2x4

x41/2

Price

41.00

56.00

71.00

83.00

101.00

132.00

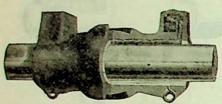
241.00

#### TYPES OF BEARINGS.



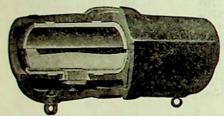
Standard.

This Bearing we have found gives our customers best satisfaction for the money invested, so to simplify lists, we usually price this bearing, and recommend this for general



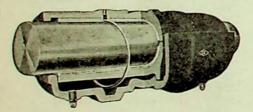
Wick-Oiling.

This Bearing is slightly higher in price than the standard bearing, and can be furnished instead when so ordered.

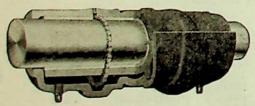


Capillary.

The Capillary is more expensive than the wick-oiling. We can furnish them when specified.



Ring.



Chain.

The Ring and Chain Bearings are equal in price, and are the most expensive bearings on the market. We furnish them when they are needed.

#### ATTENTION!

We list and price standard articles in the machinery line, that we have found from experience have proven the most serviceable and satisfactory to our customers. If for any special use you wish something that we do not illustrate or price, please write to us, and we will be pleased to quote and give you any information you may need.

#### RIGID PILLOW BLOCKS.



Our Pillow Blocks are standard, with babbitted bearings. The Oil Chamber is large, holding sufficient oil to properly lubricate bearings several months. By means of wicking, the oil is fed the full length of bearing by syphonic action when shaft is in motion.

These bearings are furnished with hard paper liners, to take up wear. Prices on larger sizes than listed on request. Diam. of Shaft. Lgth. of Bearing. Price, each. 11 inches. 3¾ inches.....\$1.60 11 inches. 4½ inches..... 5¼ inches. 2.70 6 inches. 3.70 inches. 118 inches. 6¾ inches..... 21 inches. 4.60 216 inches. 7½ inches....





Our Common Flat Boxes have babbitted bearings of sufficient length for all ordinary purposes. They are strong and well made, and will give perfect satisfaction.

These bearings are furnished with Hard Paper Liners to

take up wear.

We can furnish bearings for intermediate sizes of shaft at price of next larger size listed, but they have to be made after order is received.

Drives on larger sizes than listed on request

	ger sizes than fisted on requ	
Diam. of Shaft.	Lgth. of Bearing.	Price, Each.
18 inch.	2 inches	\$1.00
	2½ inches	
11 inches.	3 inches	1.65
11 inches.	3½ inches	
118 inches.	4 inches	
21 inches.	4½ inches	
216 inches.	5 inches	3.40
	208 P. C.	





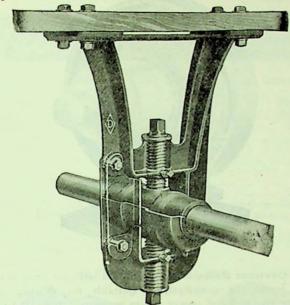
These are standard, with babbitted bearings. The same method of lubricating bearing is used as in our Pillow Block and Post Hangers. Vertical adjustment is obtained by means of slotted holes in back of bracket.

We know this to be the cheapest and most economical bearings of its kind on the market.

These bearings are furnished with hard paper liners to

take up wear.	Trices on larger	Sizes than list	ed. on request.
Diameter	Length	Standard	
of Shaft.	of Bearing.	Price, each.	Bearing, each.
1 nd inches.	3¾ inches.	\$3.25	\$ 4.70
17 inches.	4½ inches.	3.60	5.35
1th inches.	51/4 inches.	4.10	7.00
118 inches.	6 inches.	5.45	9.10
21 inches.	6¾ inches.	7.25	11.65
27 inches.	7½ inches.	8.35	14.65
	154 P.	C.	22.00

ADJUSTABLE BALL AND SOCKET DROP HANGERS.



Double Brace.

Embodied in this Hanger are rigidity of frame, the maximum of strength, and minimum of weight, combined with a true ball and socket principle in bearing supports.

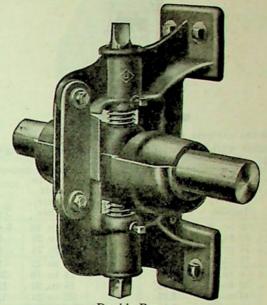
This frame accommodates our full line of interchangeable bearings, which are placed in position by detaching the double brace links.

All adjustments are full machined, and shafting is easily lined up.

lined up.			
Diameter	Drop to	Standard	Ring
of	Shaft Center,	Type,	Type,
Shaft.	Inches.	Each.	Each
1 rs	8	\$ 3.95	\$ 5.15
1 rs		4.10	5.30
1 rs		4.30	5.50
1 fs		4.55	5.75
176		4.90	5.90
170		5.05	6.05
170		5.25	6.25
17		5.50	6.50
170		5.60	6.60
170		6.00	7.00
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		5.00	6.15
111		5.15	6.30
1 1 2		5.35	6.50
118		5.60	6.75
114		5.70	6.85
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		6.10	7.25
118		6.85	9.00
118		7.35	9.50
118		7.50	9.65
118		7.80	9.95
118		8.05	10.20
118		8.30	10.45
213		8.70	10.95
216		9.05	11.30
21g		9.20	11.45
218		9.70	11.95
21g		10.30	12.55
2 nd		10.75	13.00
21g		9.35	11.60
$2^{7}_{16}$		9.70	11.95
216			12.10
$2^{1\overline{a}}_{1$			12.10
		10.35	100000000000000000000000000000000000000
27		10.95	13.20
2170	. 18		13.65

104 P. C.

ADJUSTABLE BALL AND SOCKET POST HANGERS.



Double Brace.

A companion to our Adjustable Ball and Socket Drop Hanger, and combines the same general features.

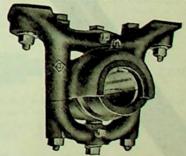
Both types have adjustable plunger screws and their bases ground to a flat even surface, so that no shimming or wedging is necessary to get a firm stand on the stringers, beams or posts.

All castings are made from finely finished and accurately matched metal patterns, thus assuring exceptionally smooth castings.

Prices on larger sizes than listed on request.

Diam.	Standard	Ring	Diam.	Standard	Ring
of	Type,	Type,	of	Type,	Type,
Shaft.	Each.	Each.	Shaft.	Each.	Each.
1 rg-in.	\$4.50	\$5.70	1 1 1 in.	\$ 7.15	\$ 9.30
17g-in.	5.50	6.50	213-in.	9.75	12.00
1 12-in.	5.60	6.75	2 rs-in.	10.40	12.65
		108 I	P. C.		

#### SHORT DROP-HEAD SHAFT HANGERS.



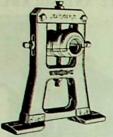
Adjustable Pillow Blocks.

This design possesses the features essential to a highgrade Head Shaft Hanger, and it is especially constructed to meet the demand for drops under 12 inches.

By inverting the frame, an excellent Adjustable Pillow Block is obtained.

Diameter of	Drop.	Standard Type,	Ring Type,
Shaft.	Inches.	Each.	Each.
170-inch	33/4	\$ 4.45	\$ 5.45
1 1 d-inch	33/4	4.55	5.70
1 1 % -inch	43%	6.65	8.80
3%-inch	5	8.70	10.95
276-inch	5	9.35	11.60
	106	P. C.	

#### PRESSED STEEL SHAFT HANGERS.

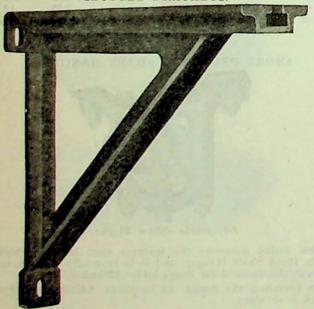


Combines extreme lightness with great strength. Complete with babbitted, reamed and faced Ring-oiling

op to haft enter,
enter,
iches. Price.
to 16   \$ 8.25
to 20 8.75
to 24 9.50
to 12   9.50
to 16 10.50
to 20 11.25
to 24   12.25
to 12   10.50
to 16 11.50
to 20 12.25
to 24   13.25
to 12   13.50
to 16 15.00
to 20 17.00
to 24 18.50
to 12   15.50
to 16 17.00
to 20 19.00
to 24 20.50

206 P.C.

#### SLOTTED BRACKETS



The prices given below are for Slotted Brackets only, to which must be added price of Flat Journal Box, or Rigid Pillow Block, whichever is desired.

Diameter Extension, Extension, Extension, of Shaft. 12-inch 18-inch. 24-inch. 114 to 2 % in. \$11.80

List Plus 104 P. C.

30 inch.

\$19.60

\$16.60

#### STRITE GOVERNOR PULLEY AND STAND.



No. 15.

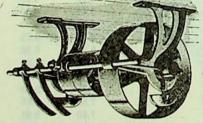
This Governor Pulley is mounted on a self-contained stand which forms the countershaft. Suitable for driving any make or size of hand power cream separator 40 to 60 turns per minute when the governor pulley is driven any speed over 225 and a 12 or 14-inch pulley placed upon the cream separator shaft where the hand crank would be attached. The stand may be bolted to the floor, ceiling or side wall of any building, belting from a line or countershaft or a gasoline engine to the outside friction rim and from the governor pulley part proper to the 12 or 14-inch pulley on the separator.

No. 10 Strite Governor Pulley and countershaft complete made to bolt to the ceiling. This pulley is made either with or without throw-out clutch. Press lever in and separator will stop. Pull out and it will start the separator slowly.

Pulley complete except wood lever.

No. 10. Price, each, F. O. B. Factory.........7753 \$15.00

#### COUNTERSHAFTS.







Nos. 11/2 and 2.

These are exceptionally strong and durable Countershafts. Neat in appearance, smooth-running, and well-balanced, all boxes babbitted, and will not heat at high speed. Suitable for any purpose where countershafts are required.

	No. 0.	No. 1.	No. 11/2.	No. 2.
T. and L. Pulleys	.7x5"	6x4"	5x3"	4x2"
Driving Pulleys	.16x5"	12x4"	11x3"	9x21/2"
Size of Shaft		1 18 x 22"	1x161/2"	7/8x12"
Drop of Hanger	.9"	7"	6"	5"
Weight of Hanger	.100 lbs.	60 lbs.	45 lbs.	30 lbs.
Price, each	. \$24.00	\$14.00	\$11.00	\$ 9.00
	List N	let.		

#### SHAFTING.



Turned and Polished Shafting of Standard Lengths in

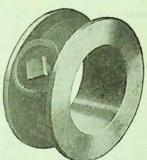
Stock:			
Diameter	Price per	Diameter	Price per
in	Running	in	Running
Inches.	Foot.	Inches.	Foot.
1/2	\$0.05	1 rs	\$0.21
5/8	07	170	
3/4		111	40
7/8		115	
18		2 rg	
1		27	80
days .			

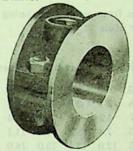
The above prices are for standard lengths, as follows: 1 %-inch diameter and less, 10, 12, 14, 16, 18 and 20 feet long; larger sizes, 10, 12, 14, 16, 18, 20 and 24 feet long.

For shorter or odd lengths, add price of one foot additional to length wanted for cutting.

Market Price.

#### SAFETY SET COLLARS.





Split.

Our Safety Set Collar has the set screw protected, which is a great advantage, especially when used on shafting placed near workmen, as the possibility of accident is eliminated. They comply with all legal requirements:

Diameter	Price	Each,	Diameter	Price	Each,
of Shaft.	Solid.	Split.	of Shaft.	Solid.	Split.
15-inch	\$0.65	\$0.95	216-inch	\$2.10	\$3.15
13 -inch	.80	1.20	2 † 8 - inch	2.40	3.60
17g-inch		1.50	3rg-inch	2.70	4.05
11d-inch		1.80	318-inch	3.00	4.50
118-inch	1.40	2.10	3 15 - inch	3.60	5.40
213-inch	1.60	2.40	477 -inch	4.70	7.05
2 ra-inch	1.80	2.70	4 18 - inch		8.85
- 16 men		2010	2 2 11		

We are prepared to furnish Set Collars for Intermediate Sizes of shaft, at prices of next larger size listed. 454 P. C.

#### COMPRESSION COUPLINGS.



These Couplings are bored and hand-reamed, thus insuring a perfect-fitting Coupling.

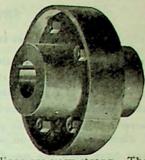
They clamp the shaft with all the direct force of the bolts and hold the shaft parallel with a positive grip.

A very prominent feature of these Couplings is that they may be easily removed and replaced, which is a great convenience when pulleys are to be put on or taken off shaft.

These comply with all legal requirements as to safety by having bolt heads and nuts protected.

All Couplings for 11%-inch shafting and less, are furnished with steel pins.

Diameter		Diameter	
of Shaft.	Each.	of Shaft.	Each.
17 inches	\$ 3.05	1 th inches	\$ 7.40
17 inches		213 inches	9.00
1th inches		21 inches	10.00
167	52 P	. C.	



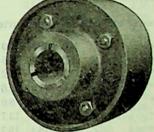
FLANGED FACE COUPLINGS.

These Couplings are very strong. The faces are male and female, and are accurately fitted together. They are keyseated, and provided with keys.

Diameter	Price not	Diameter	Price not
of Shaft.	Fitted.	of Shaft.	Fitted.
1rg-inch	\$ 7.50	118-inch	\$ 9.00
17g-inch	8.00	213-inch	10.50
111-inch		27 inch	\$12.50
Diameter	Fitted	Diameter	Fitted
of Shaft.	to Shaft.	of Shaft.	to Shaft.
13 -inch	\$11.25	118-inch	\$13.50
17g-inch	12.00	23-inch	15.25
111-inch	12.75	27g-inch	17.75

For reducing Flange Couplings, take price of the larger of the two sizes required.

106 P. C.



#### KEYLESS COMPRESSION COUPLINGS.

It consists essentially of a separate outer shell with tapering cone and a slotted inner sleeve, which is tapered on the outside to fit the outer shell, which causes it to securely grip the shaft when the outer parts are drawn together over it by means of the bolts.

The design of this Coupling is excellent, and its construction so simple, that an ordinary workman can erect it as satisfactorily as a skilled mechanic or millwright.

Diameter	Price,	Diameter	Price,
of Shaft.	Each.	of Shaft.	Each.
1 re-inch	\$ 4.75	1 1 1 1 inch	\$ 8.00
1 ve-inch	5.50	216-inch	9.00
114-inch	6.25	27 inch	10.75
	101 F	. C.	



#### SQUARE JAW COUPLINGS.

To optam total price of Coupling with lever, add price of lever to price of Coupling.

When Couplings are wanted fitted to shaft, add price of Fitting to Shaft.

. Fitting to Shart.	rnce,
	Cast Jaws.
Diameter of Shaft 118-inch: C	oupling\$10.00
	ever 2.00
	itting to Shaft 3.00
	oupling 11.96
	ever 2.00
	itting to Shaft 4.00
	oupling 13.80
	ever 2.00
	itting to Shaft 4.25
	oupling 15.25
	ever 2.15
	itting to Shaft 4.50
The state of the s	
	ever 2.15
	itting to Shaft 4.50
	oupling 19.05
	ever 2.15
F	itting to Shaft 4.50

List, plus 201 P. C.

#### SHOP EQUIPMENT INFORMATION.

#### Rules for Finding Speeds of Pulleys and Shafts.

RULE 1.—To find the speed of one shaft the diameter of both pulleys being given, and the speed of one of the shafts:

Multiply the diameter of the pulley by the given speed of the shaft on which it is placed, and divide by the diameter of
the second pulley; result, speed of second shaft.

RULE 2.—Diameter of pulley and speed of both shaftsbeing given, to find DIAMETER of pulley on second shaft:

Multiply the diameter of pulley by the given speed of the shaft on which it is placed, and divide by the speed of the second shaft; result, diameter of pulley on second shaft.

NOTE.—You must have both the speed and diameter of one pulley and either the speed or diameter of the second pulley, to find the result desired.

#### Examples.

A 24-inch diameter pulley running 200 revolutions per minute, drives an 8-inch diameter pulley. What is the speed of the second shaft? Apply Rule 1:

24-200-4,800-8-600 revolutions of second shaft.

An 8-inch diameter pulley running 600 revolutions per minute, is driven from a shaft running 200 revolutions per minute what diameter of pulley is necessary? Apply Rule 2:

8-600-4,800-200-24-inch pulley.

A shait should run 600 revolutions per minute, and is driven from a shaft running 200 revolutions per minute, with a 24-inch diameter pulley. What size pulley is necessary? Apply Rule 2:

24-200-4,800-600-8-inch diameter pulley.

#### Table of Horse-Power of Shafting Transmitted with Safety at 8 or 10 feet Centers of Bearings.

Revolutions per Minute				100	125	150	175	200	225	250	300	350	400							
Shaft	Sizes,	Inches,	18	Horse	-pow	er	1.0	1.3	1.6	1.8	2.1	2.3	2.6	3.1	3.7	4.2	Weight	per	foot:	2.35
"	"				"		2.1	2.6	3.2	3.7	4.2	4.7	5.3	6.3	7.4	8.4	"	"	"	3.77
"	"	"	176	"	"		3.7	4.6	5.6	6.5	7.4	8.3	9.3	11.1	13.0	14.8	"	"	"	5.52
"	"	"	111	"	"		6.0	7.5	9.0	10.5	12.0	13.5	15.0	18.0	21.0	24.0	"	"	"	7.61
**	"	"	118	"	"		9.1	11.4	13.7	15.9	18.2	20.5	22.8	27.3	31.9	36.4	"	"	"	10.03
"	"	"	218	"	"		13.1	16.4	19.7	22.9	26.2	29.5	32.8	39.3	45.9	52.4	"	"	"	12.80
"	"	"	216	"	"		18.1	22.6	27.2	31.7	36.2	40.7	45.3	54.3	63.4	72.4	"	"		15.89

The best speed for a line shaft in a blacksmith or machine shop, is about 130 revolutions per minute. In a wood-working shop, 300 to 350 revolutions per minute.

#### Table of Approximate Horse-Power of Leather Belting.

Transmitted with safety at an assumed tension of 50 pounds per inch of width for single belt, and 75 pounds per inch of width for double belt, at a velocity of 100 feet per minute:

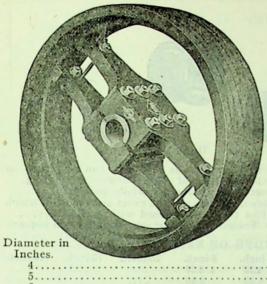
Width	of	Bel	t	1	inch.	Single	Belt	.15	horse	-power.	Double	Belt		horse	-power.
"	"	"		2	inches.	"	"	.30		0846		"	45	"	"
"	**	"		21/2	"	"		.37	"	"	"	"		"	"
"	"	"		3	"	"	"	.45	**	"	"	"	67	"	"
"	"	"		31/2	"	"	"	.53		"	"	"	79	**	"
"	"	**		4	и	и	"	.60	"	"	THE LINE	"	90	"	"
**	"	"		41/2	"	"	"	.67	"	"	"	" ·	1.00	"	"
	"	"		5	"	"	"	.75	"	"	"	"	1.12	"	"
"	"	"		6	"	u	"	.90	"	"	"	"	1.35	"	"
"	"	"		8	"	"	"	1.21	"	"	"	"	1.81	**	"
"	"	"		10	"	"	"	1.51	"	"	"	"	2.26	**	"
"	"	"		12	"	**	"1	1.81	"	"	."	"	2.71	"	"

We advise Leather Belt to be used where a great deal of shifting is to be done.

#### Table of Approximate Horse-Power of Rubber and Canvas Belting.

Transmitted with safety at an assumed tension of 50 pounds per inch of width for 3-ply Rubber and 4-ply Canvas, and 75 pounds per inch of width for 4-ply Rubber and 6 and 8-ply Canvas, at a velocity of 100 feet per minute.

to pounds per men or mann to	- P-3			F-3			,	oo . eee P		The state of the s	
Width of Belt	1-in.	2-in.	21/2-in.	3-in.	3½-in.	4-in.	5-in.	6-in.	8-in.	10-in.	12-in.
Horse Power:		,,									
Rubber—3-ply	.10	.20	.25	.30	.36	.40	.50	.60	.81	1.01	1.21
4-ply	.14	.28	.36	.43	.50	.55	.68	.90	1.16	1.40	1.75
Canvas-4-ply	.10	.20	.25	.30	.36	.40	.50	.60	.81	1.01	1.21
6-ply	.14	.30	.37	.45	.54	.60	.81	.95	1.20	1.40	1.80
8-ply	.20	.41	.50	.61	.72	.80	1.00	1.20	1.63	2.04	2.44



#### WOOD SPLIT PULLEYS.

In small diameter, these Pulleys are made solid.

All Pulleys most carefully turned (rims turned inside and outside, making well-balanced pulleys), to insure running true. Sufficient clamping bolts are used to give a strong clamp on the shaft, and thereby avoid danger of slipping.

INSTRUCTIONS. In order that Wood Pulleys give the best service, it is necessary to tighten up all bolts once a week for several weeks after Pulley is put on shaft, as the wood naturally gives a little when first used. If you follow this rule; you will never have trouble.

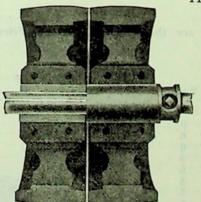
CROWN FACE Pulleys are used for driving belts, and should be the same width of face as the width of belt.

STRAIGHT FACE Pulleys are used for shifting belts in connection with Tight and Loose Pulleys, and must be twice as wide on face as the width of belt.

If the kind of face is not given on order, Crown Face will be sent. For price of Cone Step Pulley, treat each step as a separate Pulley, and add 50 per cent to the total.

iameter in	C. William	-				WIL	TH C	FFA	CE IN	VINC	HES		
Inches.		-			3-in.	4-111.	5-in.	6-in.	8-in.	10-in.	12-in.	14-in.	16-in.
-					\$2.80	\$2.90	\$3.10	\$3.30	\$3.70	\$4.10	\$4.50		
				 200000	2.85	2.95	3.20	3.40	3.85	4.30	4.75		
-				 	2.90	3.00	3.25	3.50	4.00	4.50	5.00		
					2.95	3.05	3.35	3.60	4.15	4.70	5.25	\$5.80	
				 	3.00	3.10	3.40	3.70	4.30	4.90	5.50	6.10	
					3.10	3.25	3.60	3.90	4.55	5.20	5.85	6.50	
					3.25	3.40	3.75	4.10	4.80 5.30	5.50	6.20	6.90	\$7.60
					3.75	3.70	4.10	4.50	5.80	6.10	6.90 7.60	7.70 8.50	8.50 9.40
					3.10	4.30	4.80	5.30	6.30	7.30	8.30	9.30	10.30
						4.60	5.15	5.70	6.80	7.90	9.00	10.10	11.20
						4.90	5.50	6.10	7.30	8.50	9.70	10.10	12.10
						5.20	5.85	6.50	7.80	9.10	10.40	11.70	13.00
						5.50	6.20	6.90	8.30	9.70	11.10	12.50	13.90
18			 	 		5.80	6.55	7.30	8.80	10.30	11.80	13.30	14.80
19			 	 		6.10	6.90	7.70	9.30	10.90	12.50	14.10	15.70
						6.40	7.25	8.10	9.80	11.50	13.20	14.90	16.60
						7.00	7.95	8.90	10.80	12.70	14.60	16.50	18.40
						7.70	8.80	9.90	12.10	14.30	16.50	18.70	20.90
26			 	 		8.40	9.65	10.90	13.40	15.90	18.40	20.90	23.40
						9.10	10.50	11.90		17.50	20.30	23.10	25.90
						9.80	11.35	12.90	16.00	19.10	22.20	25.30	28.40
				 100000		10.50	12.20	13.90	17.30	20.70	24.10	27.50	30.90
				 		11.30	13.15	15.00	18.70	22.40	26.10	29.80	33.50
						12.10	14.10	16.10	20.10	24.10	28.10	32.10	36.10
								17.20	21.50	25.80	30.10	34.40	38.70
10			 	 				18.30	22.90	27.50	32.10	36.70	41.30

#### 304 P. C. TIGHT AND LOOSE PULLEYS.



Standard Construction Wood Pulleys.

All Pulleys of diameters and faces herein listed, are standard and not subject to any extra charges, when made with-

ard and not subject to any extra charges, when made without special features, and when bored as follows:

	With	Interchangeable	Bushing	System.	
3-inch	diameter	r		11/2-inch	bore
4-inch	diamete	r		2 -inch	bore
41/2 to	7-inch	diameter		275-inch	bore
71/2 to	23-inch	diameter		3 -inch	bore
23½ to	48-inch	diameter		3½-inch	bore
481/2 to	72-inch	diameter		41/2-inch	bore
72-inch	diameter	up to 12-inch fa-	ce	4½-inch	bore
S	tandard	Bores for Standa	rd Iron S	plit Pulleys.	
		meter inclusive.			bore

MANUAL TO THE PARTY OF THE PART	o to 5-men diameter, inclusive	216-Inch bore
	10 to 24-inch diameter, inclusive	214-inch bore
A	25 to 36-inch diameter, inclusive	376-inch bore
	37 to 54-inch diameter, inclusive	318-inch bore
Prices of Iron Sleeves to be	added to the price of Pulleys.	

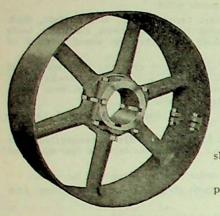
Length	Length	Length	Length
Outside of Price.	Outside of Price.	Outside of Price.	Outside of Price.
Diameter. Sleeve.	Diameter. Sleeve.	Diameter. Sleeve.	Diameter. Sleeve.
276-inch 3½-inch, \$2.20	218-inch 31/2-inch, \$2.40	378-inch 4½-inch, \$3.30	318-inch 61/2-inch, \$5.65
276-inch 4½-inch, 2.50	2 ta-inch 41/2-inch, 2.90	37a-inch 5½-inch, 3.95	318-inch 81/2-inch, 7.36
276-inch 51/2-inch, 2.85	2 18-inch 51/2-inch, 3.50	318-inch 61/2-inch, 4.65	318-inch101/2-inch, 9.00
276-inch 61/2-inch, 3.35	2 ta-inch 61/2-inch, 4.15	37a-inch 8½-inch, 6.00	318-inch121/2-inch, 10.75
276-inch 81/2-inch, 4.15	2 th-inch 81/2-inch, 5.35	374-inch101/2-inch, 7.65	318-inch141/2-inch, 12.75
275-inch101/2-inch, 4.95	218-inch101/2-inch, 6.50	37a-inch121/2-inch, 9.00	The state of the s
27a-inch12½-inch, 5.75	211-inch121/2-inch, 7.65	318-inch141/2-inch, 10.40	

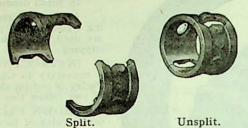
inch.... 12½-inch, 5.75 21%-inch... 12½-inch, 7.65 3√a-inch...

For split sleeves add 50 per cent to above prices. Collar is additional. Sleeves are ordinarily furnished one-half inch longer than face of pulley.

306 P. C.

#### SPLIT IRON PULLEYS.





The great advantage of split pulleys over whole pulleys, is that they can be placed on shafting that is already in position without the necessity of taking down the shafting.

Order Split Iron Pulleys with the same care that you order whole pulleys.

Order Split Iron Pulleys with the same care that you order whole pulleys.

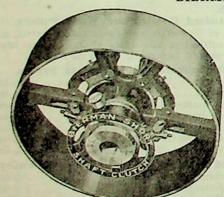
Give diameter in inches first, then the face in inches, and the exact size shaft on which pulley is to be used. One pair of bushings like the cut furnished with each pulley.

These prices for pulleys for ordinary duty. Prices on larger or special pulleys on request.

Diameter in				WIDTH	OF FACE	IN INCH	HES.	
Inches.	3-in.	4-inch.	5-inch.	6-inch.	8-inch.	10-inch.	12-inch.	14-inch.
6	\$ 3.25	\$ 3.85	\$ 4.05	\$ 4.30	\$ 5.20			
7	3.40	4.00	4.25	4.50	5.40			
8	3.55	4.20	4.45	4.70	5.60	\$ 6.40		2
9	3.70	4.35	4.60	4.90	5.90	6.65		
10	3.85	4.50	4.80	5.15	6.20	6.90	\$ 8.00	
11	4.20	5.15	5.45	5.80	7.20	7.90	9.00	
12	4.35	5.35	5.70	6.05	7.40	8.20	10.20	\$12.25
13		5.55	5.90	6.30	7.75	8.55	10.80	12.50
14		5.75	6.10	6.55	8.05	8.95	11.25	12.75
15		5.95	6.35	6.80	8.35	9.30	11.50	13.15
16		6.15	6.60	7.10	8.70	9.70	12.00	13.80
18		6.65	7.15	7.70	9.45	10.60	13.10	15.15
20		7.60	8.95	9.60	11.55	12.90	16.00	18.00
22		8.20	9.55	10.30	12.45	14.00	17.30	19.65
24		9.70	11.25	12.05	14.70	16.50	20.40	22.95
26		10.50	12.05	13.00	15.95	18.00	22.25	24.90
28		11.30	12.90	13.90	17.10	19.50	24.10	26.80
30		12.15	13.85	14.95	18.40	21.15	25.85	28.80
32		13.90	16.05	17.25	21.15	24.15	30.35	33.50
34		14.90	17.10	18.50	22.60	25.85	32.30	35.70
36		15.90	18.25	19.70	24.10	27.60	34.30	37.90
38		19.05	21.45	23.10	28.95	32.70	40.15	44.00
40		20.20	22.80	24.60	30.70	34.65	42.30	46.40

#### BIERMAN FRICTION CLUTCH PULLEYS.

53 P. C.



All Bierman Clutches are made with interchangeable jigs, and templates, enabling us to duplicate all parts and furnish such repairs as may be needed. Simple to adjust. It simply has a lock-nut top and bottom of the clutch arm. Nothing to wear out but the wood friction block, and the average boy can easily replace that. Will start the load without jerk or jar.

How to Order.

Give diameter and face of pulley, exact size of shaft, key way, and horse-power to be transmitted.

If to be bolted on fly wheel, give dimensions of wheel, speed and horse-power of engine, lug and bolt circle, also diameter of bolt holes.

#### Dimensions.

Following are the sizes of Bierman Friction Clutch Pulleys:

Diameter		H. P.	Largest Size	
of	Face.	200 Rev.	of	Price.
Pulley.		Per Minute.	Shaft.	
12	6	8	21/4-inch.	\$21.60
14	6	8	21/4-inch.	24.20
16	6 8	8	21/4-inch.	25.40
16	8	8	21/4-inch.	26.40
18	6	8	21/4-inch.	28.00
18	8	8	21/4-inch.	29.00
20	6	8	21/4-inch.	30.50
20	6 8 6 8	8 8 8 8 8 8 8	21/4-inch.	31.80
22	8	8	21/4-inch.	34.80
16	6		31/4-inch.	30.40
16	8	20	31/4-inch.	31.60
18	6	20	31/4-inch.	32.40
18	8	20	31/4-inch.	34.00
20	8 8 8	20	31/4-inch.	36.00
22	8	20	31/4-inch.	38.60
24	8	20	31/4-inch.	41.60
26	8	20	31/4-inch.	44.40
28	8 8 8	20	31/4-inch.	46.00
30	8	20	31/4-inch.	48.00
32	8	20	31/4-inch.	52.00

#### KEYSTONE STEEL SPLIT PULLEYS.



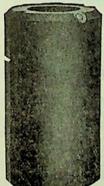
The Substantial Grooveless Rim.

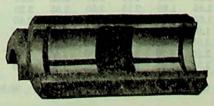
Made of 30-inch and 34-inch steel, the Keystone rim is solid, rigid and substantial. It will not break under sudden strain or high speeds, nor bend or dent in transit or handling.

No groove or seam in face to lessen belt adhesion. No beads or turned-over edges to catch dirt, metal dust, lint or other

The substantial construction of the Keystone Rim affords strength extraordinary, long wear, absence of vibration, cleanliness, and positive, power-saving belt adhesion.

			Standard	Price Li	ist.					
Width of Face in inches	2-in.	. 3-in.	4-in.	5-in.	6-in.	8-in.	10-in.	12-in.	14-in.	16-in.
Diameter in inches—	-0.15	60.00	6 9 45			. 4 .00	\$ 5.20	\$ 5.90		
6	\$3.15	\$3.30	\$ 3.45	\$ 3.75	\$ 4.05	\$ 4.60		6.10		
7	3.22	3.38	3.60	3.90	4.20	4.80	5.40			
8	3.30	3.45	3.75	4.05	4.35	4.95	5.60	6.25		
9	3.38	3.60	3.90	4.20	4.50	5.10	5.75	6.35		
10	3.45	3.75	4.05	4.35	4.65	5.25	5.90	6.45		
11	3.65	3.90	4.20	4.50	4.80	5.40	6.00	6.90	. 1711	
12	3.90	4.20	4.63	4.80	5.33	5.78	6.45	7.65	\$ 9.00	\$ 10.25
13A	4.05	4.35	4.80	5.20	5.62	6.43	7.20	8.40	9.50	10.75
14	4.20	4.50	5.20	5.65	6.15	7.05	8.03	9.00	10.00	11.25
15	4	4.65	5.45	5.80	6.55	7.65	8.80	9.75	10.75	12.00
16		4.95	5.75	6.10	6.90	8.25	9.45	10.50	11.50	12.65
17	Z III	5.25	6.00	6.50	7.28	8.78	10.05	11.25	12.40	13.65
18	E2., 00.2	5.55	6.38	7.00	7.65	9.30	10.65	12.00	13.25	14.50
19	E 200	5.80	6.75	7.50	8.25	10.13	11.25	12.90	14.20	15.60
20	E . DA E	6.00	7.50	8.10	9.00	10.73	12.00	14.25	15.30	16.90
21	47.6	6.25	8.00	8.90	9.60	11.25	12.98	15.60	18.00	20.55
22	2 1003	6.50	8.55	9.50	10.28	12.00	14.10	16.80	19.50	21.30
23		7.00	8.70	9.90	10.58	12.60	14.75	18.00	21.00	24.30
	2 20 8	7.50	8.90	10.00	10.95	13.20	15.68	19.05	22.65	26.25
	2 201	56.4	9.20	10.25	11.45	13.80	16.40	20.20	24.50	29.25
25	A	22.4	9.55	10.50	11.95	14.40	17.10	21.30	26.25	31.20
26		507.00 500 h			12.90	15.45	18.15	22.90	28.50	34.50
28		00.0	10.80	11.70		17.25	19.90	24.75	31.50	38.10
30		09.7	12.00	12.90	14.10				34.15	41.65
32			13.20	14.10	15.45	19.35	22.50	26.85	36.75	45.00
34			14.40	15.75	17.25	21.75	25.50	30.00		
36			15.90	17.85	19 50	24.00	28.65	33.75	39.75	48.60
38			19.50	20.65	21.75	26.40	31.05	37.15	42.75	51.75
40	01000		21.00	22.75	24.00	28.50	33.75	40.15	46.50	55.15
42	11. 10.6	.00.8	23.25	24.85	26.25	32.25	37.50	43.50	50.25	57.75
44	20.00.0	100.0			29.25	35.62	41.25	47.25	54.00	61.12
46	1.20.13	1 00001			33.00	39.00	45.00	50.25	57.75	64.50
48	200				36.75	42.00	48.75	54.00	61.50	67.50
50	93 OS 4	1248 1			40.87	47.25	53.25	58.50	66.00	75.00
52. 0. 29. 01.00. 40.10. 08.01. 07	5.85 17	E		******	46.50	51.00	57.00	63.00	69.00	78.75
54	81 100				50 25	56.25	61.50	67.50	74.25	83.25
56	not be the last		vend very	not could	54.00	60.75	66.75	72.75	80.25	90.00
58					60.00	65.25	71.25	78.37	86.62	96.37
	The same of the				63.75	70.50	• 77.25	84.00	93.00	102.75
60			Mar-real 1		00.10	10.00	11.20	02.00	00.00	





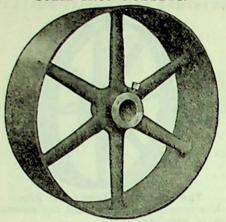
#### TIGHT AND LOOSE PULLEYS,

Cracked joint split loose bushings with large oil reservoir and spring oiler.

Price List Split Loose Pulleys.

	Tree miles where			
Size of Shaft:	4½ inches long.	5½ inches long.	6½ inches long.	7½ inches long.
		\$3.10	\$3.50	\$3.90
lie inches	\$2.75	22.10	\$3.00	22.20
17 inches	3.00	3.50	4.00	4.50
111 inches	3.25	3.85	4.45	5.10
	3.55	4.25	4.95	5.70
	3.85	4.65	5.50	6.35
	4.15	5.10	6.05	7.00
Section 1	106 P. C	OF NO.		

#### SOLID IRON PULLEYS.



Many sizes of Solid Iron Pulleys have to be made after receiving order, which takes a week to ten days.

Iron Pulleys, when properly made, nicely proportioned and balanced, are without doubt the best method of transmitting power between two revolving shafts.

In ordering Pulleys, give diameter in inches, face in inches, and exact bore.

Crown Face Pulleys are used to drive machines or shafts direct, and take belts as wide as face of Pulleys.

Straight or Flat Face Pulleys are used on shifting belts in connection with tight and loose Pulleys, and must be twice as wide in face as the width of Belt.

NOTE .- Be sure to state kind of face wanted, otherwise Crown Face will be sent.

#### WIDTH OF FACE IN INCHES.

			***	0111	,		.,								
	Sgl.	Dbl.	Sgl.	Dbl.	Sgl.	Dbl.	Sgl.	Dbl.	Sgl.	Dbl.	Sgl.	Dbl.	Dbl.	Dbl.	Dbl.
Diameter in	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt	Belt
Inches:	3-in.	3-in.	4-in.	4-in.	5-in.	5-in.	6-in.	6-in.	7-in.	7-in.	8-in.	8-in.	9-in	10-in.	12-in
3		\$2.30	\$2.40	\$2.50	\$2.70	\$2.80	\$3.05	\$3.15	\$3.45	\$3.60	\$3.85	\$4.10			
		2.30	2.40	2.50	2.70	2.80	3.05	3.15	3.45	3.60	3.85	4.10			
4			2.50	2.80	2.85	3.15	3.20	3.60	3.60	4.10	4.05	4.55			
5		2.50						1					*** 05		ec ee
6		2.50	2.70	2.80	3.05	3.15	3.45	3.60	3.85	4.10	4.30	4.55	\$5.05	\$5.55	\$6.55
	2.40	2.70	2.75	3.05	3.10	3.50	3.50	3.75	3.95	4.40	4.40	4.90	5.35	5.85	6.85
Diameter in					0		1.5							42.	
Inches:			W	idth of	Face	in I	nches:	3-in.	4-in.	5-in.	6-in.	7-in.	8-in.	10-in.	12-in.
8								\$ 2.65	\$3.00	\$3.40	\$3.80	\$4.25	\$4.75		
9								2.90	3.25	3.65	4.10	4.60	5.10		
10								3.10	3.50	3.95	4.40	4.90	5.45		
11								3.30	3.75	4.20	4.70	5.25	5.85		
12								3.60	4.05	4.55	5.10	5.70	6.30		
13								3.65	4.35	4.90	5.50	6.10	6.75		
14								4.05	4.65	5.10	5.75	6.45	7.20		
15								4.35	4.85	5.65	6.10	6.85	7.70		
16								4.65	5.20	5.80	6.50	7.30	8.20		
17								4.90	5.50	6.25	7.00	7.85	8.75		
***************************************								5.20	5.85	6.60	7.40	8.30	9.30		
18									6.25	-					
19								5.45		7.05	7.90	8.85	9.85	*****	
20								5.75	6.65	7.55	8.50	9.45		\$12.70	
22								6.35	7.40	8.45	9.50	10.55	11.55	13.85	
24								7.05	8.20	9.35	10.50	11.65	12.80	15.20	
26								7.75	9.00	10.25	11.50	12.75	14.05	16.70	
28								8.55	9.95	11.35	12.75	14.15	15.55	18.50	
30								9.40	10.90	12.45	14.00	15.85	17.15	20.35	
32								10.30	11.90	13.55	15.20	16.90	18.60	22.15	
34								11.35	12.95	14.70	16.50	18.40	20.30	24.15	
36									14.20	16.05	18.00	20.05	22.10	26.20	\$30.45
38									15.65	17.70	19.80	21.95	24.10	28.40	32.85
40									16.75	18.95	21.15	23.40	25.70	30.30	34.95
40									10.10	10.00	21.10	20.10	20.10	30.30	01.00

These prices are for Pulleys for ordinary duty. Pulleys for very heavy duty priced on application.

Prices on Pulleys of larger dimensions than listed, also on Double Arm Pulleys, furnished on request.

We are prepared to furnish Pulleys or Band Wheels with any thickness of Rim, and with Arms proportioned for any belt duty

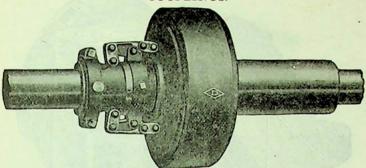
To get the price of Cone Step Pulley, treat each step as a separate pulley, and add 50 per cent to the total.

#### TIGHT AND LOOSE SOLID IRON PULLEYS.

TIGHT AND LOOSE SOLE			2222						
Additional List Prices per Pair to be Added to List Prices of Whole	Pulley	::							
Bore: Face 3-ir	. 4-in.	5-in.	6-in.	7-in.	8-in.	9-in.	10-in.	11-in.	12-in.
1 %-inch\$0.80	\$1.10	\$1.40	\$1.70	\$2.00	\$2.30	\$2.60	\$2.90	\$3.20	\$3.50
1-76-inch	1.25	1.60	1.95	2.30	2.65	2.90	3.25	3.60	3.95
1 1 1 - inch	1.45	1.80	2.15	2.50	2.85	3.20	3.55	3.90	4.30
1 1 - inch 1.30						3.40	3.75	4 20	4.70
2 fe-inch 1.4						4.00	4.45	4.90	5.35
21/6-inch 1.6	0 2.05	2.50	2.95	3.40	3.85	4.30	4.75	5.20	5 65
2 lb-inch 1.8						4.50	4.95	5.40	5.90
218-inch 2.0	5 2.50	2.95	3.45	3.95	4.45	4.95	5.45	5.95	6.45

To get the price of one pair 3x3 Tight and Loose Pulleys: Example: Two 3x3-inch Pulleys at \$2.15 each, \$4.30; extra for the Tight and Loose Attachment, \$0.80, making the net price \$6.10. 256 P. C.

.00



With Multiple Friction Discs.
Orton Type.

For light power and moderate speed where a solid clutch can be used to advantage, the Dodge Solid is the most efficient. This clutch is a neat, self-contained design, embracing those mechanical principles that make a good friction clutch.

Size of clutch, 4 inches; largest bore, 11/4 inches; horse-
power at 100 R. P. M., 11/4; speed 600; will drive
pulley 12 inches diameter, 4 inches face:
Price each

Pr	ice	, ea	ch.				٠.,									\$1	5.00
Size	of	clu	tch,	5 i	nche	s;	lar	ge	st	bor	e,	11/2	inc	hes	;	horse-	
	nor	wor	at	100	D	D	1	T	9.	cr	100	1	580 .	***	11	drive	

Dower	at	100 1	. I. 1	VL., 2,	speed,	000,	wiii	dilve	
pulley	15	inches	diam	eter, 4	inches	face:			
Price, ea	ch			Ča					17.0

Size of clutch, 6 inches; largest bore, 1% inches; h	orse-
power at 100 R. P. M., 3; speed, 560; will d	lrive
pulley 16 inches diameter, 5 inches face:	

Price	e, each.					20.	(
Size o	f clutch,	7 inches;	largest	bore, 2	inches;	horse-	

power	100 R. P. M., 4; speed, 54	o; will drive
pulley	inches diameter, 6 inches fac	e:
Price, ea	1	22.0

Size of clu	tch, 8 inches;	largest bore,	21/4 inches; horse-
power	at 100 R. P.	M., 5; speed	l, 520; will drive
puller	24 inches die	meter 6 inch	or face:

paries at menes					didilicately b menes race.			
	Price,	each						27.00

Size of cluto	ch, 9 inches; largest bore, 2½ inches; horse-
power a	at 100 R. P. M., 6; speed, 500; will drive
pulley 3	0 inches diameter, 6 inches face:

Price,	each						30.00
Size of o	clutch,	10 inches;	largest	bore, 3	inches;	horse-	

power at	00 R. P. M.,	10; speed, 480;	will drive
pulley 30 i	nches diamete	er, 10 inches fac	e:

pune	y 30	inches	diai	meter,	10	men	ies la	ice:	
Price,	each								 37.00
			-15						

Size of clutch, 12 inches; largest bore, 3 inches; special bore, 4 inches; horse-power at 100 R. P. M., 15; speed, 440; will drive pulley 36 inches diameter, 12 inches face:

inci	es race:	
Price,	each 4	15.00
	List, Net.	

#### The price list, as shown above, applies to either clutch or cut-off coupling. In ordering, specify whether clutch or cut-off coupling is wanted. Prices do not include pulley.

Speeds shown above are for clutches as are regularly built for ordinary factory requirements.

#### STITCHED CANVAS BELTING.



Our Hercules Brand of belting is made from full weight duck, woven from long staple cotton, treated with boiled linseed oil, carefully stretched in process of manufacture, and thoroughly pressed, making it compact and pliable; it is then sewed with linen thread well drawn.

#### Hercules Brand.

#### Price per Running Foot:

Wid	th.	4-ply.	6-ply.	8-ply.
2.	inch	. \$0.39	\$0.59	
21/2	inch	48	.72	
3	inch	57	.86	
31/2	inch	65	.98	
4	inch	74	1.11	\$1.48
41/2	inch	81	1.22	1.62
5	inch	90	1.35	1.80
6	inch	. 1.05	1.58	2.10
7	inch	. 1.20	1.80	2.40
8	inch	. 1.35	2.03	2.70
9	inch	1.49	2.24	2.98
10	inch	1.62	2.43	3.24
11	inch	1.76	2.64	3.52
12	inch	2.05	3.08	4.10

4-inch and under, 556 P. C. Larger, 354 P. C.

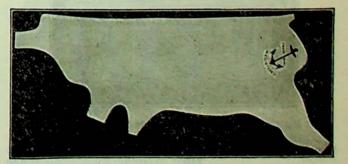
#### Endless Canvas Thresher Belts.

#### Stock Sizes:

	Length,	Length,	Length,	Length,	Length,
	50 ft.	75 ft.	100 ft.	125 ft.	150 ft.
4-ply.	6-in	\$83.00	\$110.00		
4-ply.	7-in\$65.00	95.00	125.00	\$155.00	
5-ply.	8-in				\$261.00

254 P. C.

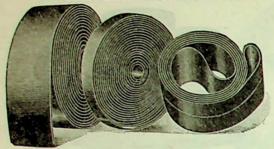
#### LACE LEATHER.



Ten to Twenty Feet to a Side.

Per square foot		451	\$1.50
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LEATHER BELTING.



Square C Brand-Highest Quality.

It is a strictly short lap and short piece belt, made from neavy center stock which is the best part of the hide, and tanned with pure oak bark. No piece longer than 50 inches is used, uniform thickness and quality throughout. Intended for all regular service except where exceptionally severe conditions are encountered, and the use of extra heavy belt is required. Made in single and double weights or plies. This belt is guaranteed to give satisfaction.

Sterling Brand-Second Quality.

This is a good quality medium weight belt which will give good service, where high speed and heavy duty is not required, made with the same care as our Square C Brand, but lighter stock is used.

Single	Thickness. Pric	e, per Running Foot:	Mark To
Width	Per	Width,	Per
Inches.	Foot.	Inches.	Foot.
1/2	\$0.12	4	\$0.96
5/s		41/2	1.08
3/4		5	1.20
7/8		51/2	1.32
1		6	1.44
11/4		7	1.68
11/2		8	1.92
13/4		9	
2		10	2.40
21/2		11	
3		12	
31/2			

Double Thickness twice price of Single.

Quarter-Turn Belts not guaranteed unless specially contructed.

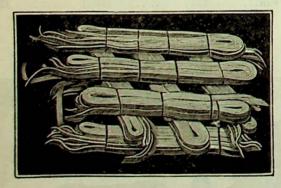
Add price of one foot of leather for having leather made endless. Square C Brand, 354 P. C. Sterling, 504 P. C.

#### OVERHAULED LEATHER BELTING.

Much cheaper than new belting. Only the sizes given are carried in stock. 1,  $1\frac{1}{4}$ ,  $1\frac{1}{2}$ , 2,  $2\frac{1}{2}$ , 3,  $3\frac{1}{2}$ , 4,  $4\frac{1}{2}$ , 5,  $5\frac{1}{2}$  and 6 inches. List same as New Belting.

508 P. C.

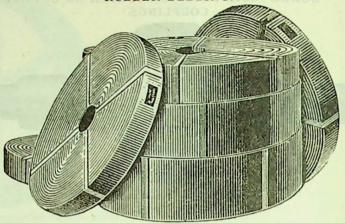
#### RAWHIDE LACING.



Cut Lace. Packed 100 feet in a bundle

	Price per		
1/4-inch	\$2.50	1/2-inch	\$5.50
fe-inch		5/s-inch	
%-inch		%-inch	7.50
re-inch			
16 mentitions	es I	0 0	

RUBBER BELTING.



Square C Brand.

A high-class belt for auxiliary drives and light machines. Has been on the market for years and its efficiency is unquestioned.

553 P. C. Sterling Brand.

Medium grade but of slightly lighter construction than Square C. It has proven very satisfactory in its own field of uses.

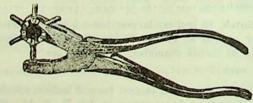
		602 P.	C.			
	Price p	er Runi	ning Foo	ot:		
Inch.	2-ply.	3-ply.	4-ply.	5-ply.	6-ply.	8 ply.
1	. \$0.18	\$0.20				
11/4	23	.26				
11/2		.31		A		
13/4		.36				
2		.39				
21/2		.48	\$0.56			
3		.55	.65			
3½		.65	.76			
4		.70	.82	.S. 001		
41/2			.92	\$1.15		
5			1.02	1.28		
6			1.22	1.53	\$1.83	\$2.44
7			1.43	1.79	2.15	2.50
8			1.54	1.93	2.31	3.08
9			1.73	2.16	2.60	3.46
10		digit if	1.92	2.40	2.88	3.84
11			211	2.64	3.17	4.22
12			2.30	2.88	3.45	4.60

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Made from carefully selected New Rubber Belt Remnants. Put together in rolls with special cement and sewed with a lock stich machine full length of roll. Furnished in only 2, 3, 4 and 6-ply.

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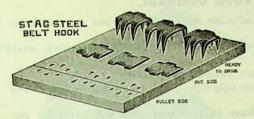
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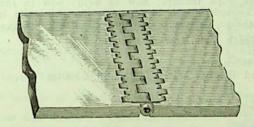


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Price, per 100	1.00
No. 1. For Single Leather, 3-ply Rubber, or Cotton Belts, 1 to 5 inches wide. Packed 100 in a box. Price, per 100	1.20
No. 2. For Heavy Single or Light Double Leather, 4-ply Rubber or Cotton Belts, 1 to 8 inches wide. Packed 100 in a box.	ale, col
Price, per 100	2.00
No. 3. For Double Leather, 4 to 6-ply Rubber or Cotton Belts, 1 to 12 inches wide. Packed 100 in a box. Price, per 100	3.40
603 P. C.	

#### BULL-DOG FLEXIBLE STEEL BELT LACING.



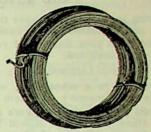
#### No. 11. For All Kinds of Belts, 16 to 1/4 Inch Thick.

	Per Box.
For 1 -in. Belts, 100 sections in a box	\$1.50
For 11/2-in. Belts, 100 sections in a box	
For 2 -in. Belts, 100 sections in a box	
For 2½-in. Belts, 100 sections in a box	
For 3 -in. Belts, 100 sections in a box	
For 5 -III. Berts, 100 sections in a box	2.20
No. 12. For All Kinds of Belts 1/4 to 1/5 Inch	Thick.
For 1½-in. Belts, 100 sections in a box	\$2.70
For 2 -in. Belts, 100 sections in a box	
For 2½-in. Belts, 100 sections in a box	4.50
For 3 -in. Belts, 100 sections in a box	5.40
No. 40 Pr. 411 W. 1 ( P.H. 5 to 2/ Took	Think
No. 13 For All Kinds of Belts is to 3/8 Inch	I nick.
For 2 -in. Belts, 100 sections in a box	\$4.50
For 21/2-in. Belts, 100 sections in a box	
For 3 -in. Belts, 100 sections in a box	6.70
For 4 -in. Belts, 100 sections in a box	
AN AND AND AND AND AND AND AND AND AND A	
Price includes annealed steel pins.	

501 P. C.

Templet for each size packed in box.

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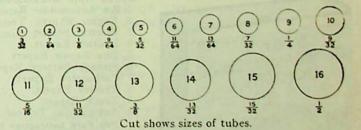
No. 3. For large Price, per coil of 50	r belt. feet	253 \$0.36
G	olden Rule Wire Lacing.	
Per coil of 50 feet:	No. 0. No. 1 No. 3 No. 4	273 .44

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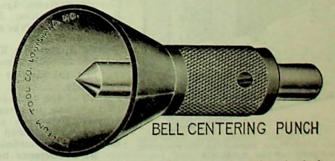


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	No. 730		
	No. 830		
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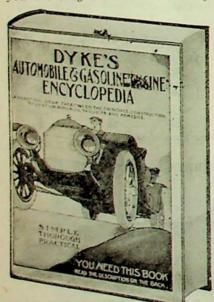
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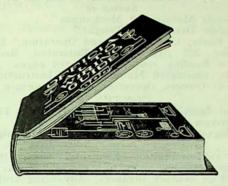
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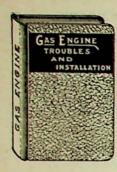
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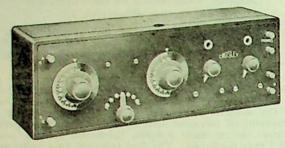
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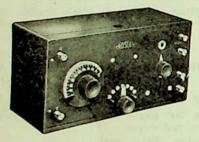
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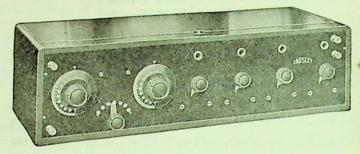
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This Radio Frequency Tuned Amplifier was designed to add one step of radio frequency to the Harko Senior, and, according to letters received from owners, the results obtained from their usage are wonderful. This unit increases the range and volume of the Harko Senior at least ten times.

Price (without bulbs or batteries)......\$15.00

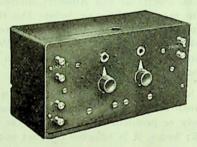
#### RECEIVER NO. X.



One of the most complete receiving outfits on the market, consisting of one stage of tuned radio frequency amplification detector and two stages of audio frequency and amplification. This set has met with wide approval, and has been praised loudly by many radio engineers.

Price (without bulbs, batteries or phones) ........\$55.00

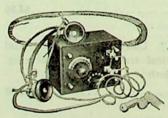
#### TWO STEP AMPLIFIER.



The Two Step amplifier consists of rheostats, sockets and transformers mounted on a panel of formica. complete with binding posts that are marked. It is designed to work well with practically all types of audion detectors, the phone posts on the detector being connected with the input posts on the amplifier.

Price (without bulbs, batteries or phones) .......\$25.00

#### CRYSTAL RECEIVER NO. 1.



Equipped with a variable condenser in series with the inductance in the antenna circuit. It is a most efficient receiver, with a range from 150 to 600 meters. Manufactured under Pickard patents. Price ..........\$25.00 (Including phone, antenna wire and insulators.)

#### AUDION DETECTOR.



May be used with any type of tuner, but we recommend it especially in connection with the Crystal Receiver No. I.

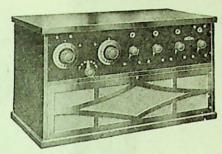
Price .....\$7.50

(Without bulb or batteries.)

RADIO OUTFITS.

On this page are illustrated products, together with views of the manner in which the various receiving sets may be hooked together. This unit feature has appealed to many persons, because they may start in on a small scale and later build a most complete station.

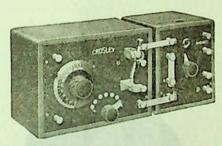
RECEIVER NO. XV.



This Crosley Receiver No. XV is a combination of the Crosley Receiver No. X and a loud speaking device. With the use of this instrument it is possible for every person in a room to listen to the music or reports being received, and under favorable conditions, an entire house will be filled with the sound.

Price (without bulbs or batteries)......\$70.00

#### CRYSTAL AND AUDION.



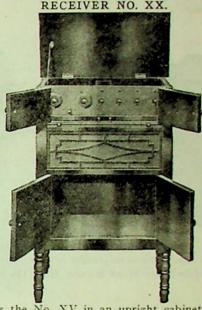
This combination of the Crystal Receiver No. 1 and the Crosley Audion Detector is equivalent to the Harko Senior. Care must be taken in connecting the binding posts as shown in the picture.

CRYSTAL AUDION, R. F. A. VS. TWO STEP.



Here we have the Crystal Receiver No. I, the Audion Detector, the Radio Frequency Turned Amplifier and the Two Step Amplifier, which really is equivalent to the Receiver No. X.

The Crystal Receiver No. I, the Audion Detector and Two Step Amplifier, shown above, form a combination that is the same as the Harko Senior and Two Step Amplifier.



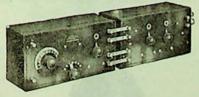
No. XX is the No. XV in an upright cabinet. The top and doors open on hinges, making it easy to reach into any part of the cabinet. The lower compartment is for batteries. Directly under the receiving apparatus is a drawer that slides in and out, forming an arm rest for the operator. This is a beautiful outfit.

Price (without bulbs, batteries and phones) ......\$100.00

CRYSTAL AUDION VS. TWO STEP.



HARKO SENIOR VS. TWO STEP.

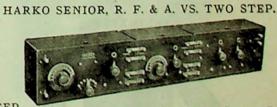


The Harko Senior and Two Step Amplifier, hooked together, form a combination that is hard to beat. Far away stations come in clearly and distinctly with this set. The price is low, and the efficiency of the outfit is extraordinarily high.

NO. VI VS. TWO STEP.



The Radio Receiver No. VI and the Two Step Amplifier form a combination that is the same as the Receiver No. X, a most complete outfit. This combination has met wide approval and produces most satisfactory results. 253 P. C.

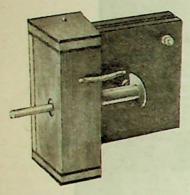


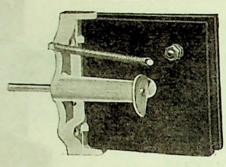
The Harko Senior, Radio Frequency Tuned Amplifier and Two Step Amplifier, hooked together, form an outfit that is equivalent to the Receiver No. X, a most complete and efficient out-

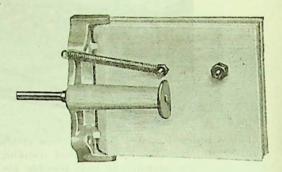
#### RADIO SUPPLIES

This page and the next are devoted to the radio parts, all of which are used in the completed sets illustrated on the previous page.

#### VARIABLE CONDENSERS.







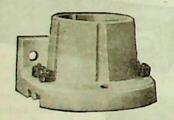
Variable Condensers have many advantages over the old types of interlocking plate air condensers, chief of which is the fact that there is no danger of short circuiting. They depend upon a thin sheet of mica as insulation between the plates, and as there is no friction from the opening and closing of the plates, the mica will last as long as the condenser.

#### Prices.

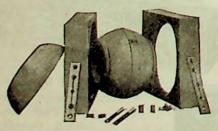
Model A.	Each	\$1.25
Model B.	Each.	1.7
Model C.	Each.	2.2

(With knobs and dials, \$0.40 extra.)

#### V-G SOCKETS.



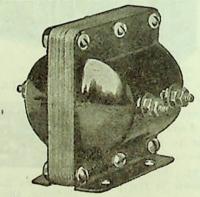
#### BARIOMETERS.



Consists of two stators and a rotor made of poplar wood, well shellacked. Winding forms, costing 30c, may be obtained with these, but they can be used in making any number of variometers.

Price each ......\$1.50

#### SHELTRAN TRANSFORMERS.



#### VARIO COUPLERS.



#### RADIO SUPPLIES.

On this page are illustrated more of the products, all of which are made with extraordinary accuracy and are designed to bring about the best results possible.

#### KNOB DIALS.



These knobs and dials are well made and inexpensive, and are suitable for all purposes where knobs and dials are needed. The dials are 213 inches in diameter and are made of solid hard

Price	J	ı.				ì					Ü				.\$0.40

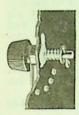
#### RHEOSTATS.



Unique construction permits the Rheostat to be mounted on a panel of any thickness up to and including % of an inch. Their resistance is six ohms and they will carry one ampere without heating.

Price	 	 \$0.60

#### TAP SWITCHES.



Assure constant tension, and all possibility of the switch loosening and developing a faulty contact on the taps is eliminated. Furnished with tapered knob and nickel-plated switch arm and bushing.

Price	\$0.30
-------	--------

#### RADIO FREQUENCY AMPLIFYING TUNERS.



Permits tuning to any wave length between 200 and 600 meters, depending for its action on the infinite impedence principle. Energy entering the R. F. A. T. at the frequency to which it is tuned is blocked and forced into the detector tube.

Price .....\$2.50

#### BINDING POSTS.



These are made in three sizes, but all are of the same design.

3/8"	Dia.	Price,	each\$0.05
10"	Dia.	Price,	each
1/2"	Dia.	Price,	each

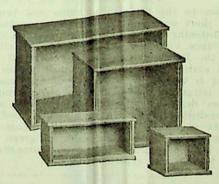
#### MEGAPHONES.



This is designed to take any watch case receiver. It has a built-in megaphone or sound amplifying horn that will radiate signals and music. It is made of hard wood, Adam brown mahogany finish.

rice											•	10.00
	 	 									 w	10.00

#### CABINETS.



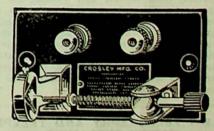
Made in many sizes, are of hard wood, Adam brown mahogany finish and are staunchly constructed. Inside dimensions and prices, including those of panels, follow:

	For						
Model	Panel Sizes	High	Wide		Cabinet		
A-1	6x 7	AL SALESSEE WAS A STATE OF		Deep	Prices		
A-2	THE RESERVE OF	5½ in.	6½ in.	7 in.	\$2.50	\$1.05	
	6x10½	5½ in.	10 in.	7 in.	2.75	1.58	
A-3	6x14	5½ in.	13½ in.	7 in.	3.30	2.10	
A-4	6x21	5½ in.	20½ in.	7 in.	3.90	3.15	
B-5	9x14	8½ in.	13½ in.	10 in.	3.70	3.15	
B-6	12x14	11½ in.	13½ in.	10 in.	4.40	4.20	
B-7	12x21	11½ in.	20½ in.	10 in.	5.25	6.30	

#### HEADSETS.

Frost	double	headset,	2,000	Ohms.	Each\$6.00
Frost	double	headset.	3,000	Ohms.	Each 7.50

#### CRYSTAL DETECTOR STANDS.



This unit is especially well constructed, neatly mounted on black base covered on the bottom with green felt. All parts are bright nickel finish, complete with mounted crystal, binding posts, etc., manufactured under the following Pickard patents: "Patented Jan. 21, 1908; Nov. 17, 1908; June 15, 1909; Sept. 7, 1909; July 21, 1914; Sept. 8, 1914; Nov. 24, 1914; April 27, 1915; Jan. 23, 1917. Licensed for amateur, experimental or entertainment purposes only. Any other use will constitute an infringement."

Price .....\$2.50

251 P. C.

(H) ELECTRICAL BOOKS.

#### RADIO HOOK-UPS.

#### By M. B. Sleeper.

This is a very essential little volume to every radio experimenter. It contains the wiring diagrams of eighty-six different wireless circuits suitable for the reception of radiotelegraphy or radio-telephony. Suitable explanations accompany every diagram, and space is left for the experimenter to enter notes of his own regarding experimentation with the various hook-ups.

The diagrams commence with the simplest crystal detector sets and work up to the more complicated receiving circuits. One notable feature of the diagrams is the elimination of every unnecessary piece of apparatus from the cir-cuits. There is not a single freak diagram in the volume. The book is indispensable to the radio amateur who designs or builds his own receiving apparatus.

#### DESIGN DATA FOR RADIO TRANSMITTERS AND RECEIVERS.

#### By M. B. Sleeper.

The only book that gives tables and data for designing receiving and transmitting apparatus so that you need no knowledge of mathematics. It's the first book a beginner buys after he has learned to use his phone receiver.

Far from being a collection of formulas, design data takes up in proper sequence the problems encountered in planning all types of receiving sets for short, medium and long wave work, and spark coil, transformer and vacuum tube transmitters operating on 200 meters. Tables have been worked out so that values can be found without the use of mathematics. Radio experimenters will find here information which will enable them to have the most modern and efficient equipment.

Price ......\$0.75

#### CONSTRUCTION OF RADIOPHONE AND TELE-GRAPH RECEIVERS FOR BEGINNERS.

#### By M. B. Sleeper.

#### (Fully Illustrated.)

The man who wants to feel the real thrill of accomplishment, and who is not satisfied in the merely making use of what others have done for him, builds his own radio apparatus. Experimenters and novices must take their instructions from reliable sources, however, to assure the success of their work. Radio men can follow the data in "Radio Phone and Telegraph Receivers" in full confidence because each piece of apparatus described was first made, tested, and found efficient before the final design was accepted. Special receivers, both crystal and audion, are shown in detail. Regenerative circuits as well as audio and radio frequency amplifiers are described and illustrated by clear photos, diagrams, and working drawings prepared especially for the novice and the man who wants to receive what is being broadcasted daily by the broadcasting stations. A special feature is the phonograph type radio set and the loud speaker which is suitable for installation in the parlor or living room of the home.

#### WIRELESS TELEGRAPHY AND TELEPHONY SIMPLY EXPLAINED.

#### By Alfred P. Morgan.

This is undoubtedly one of the most complete and comprehensive treatises on the subject ever published, and a close study of its pages will enable one to master all the details of the wireless transmission of messages. The author has filled a long-felt want and has succeeded in furnishing a lucid, comprehensible explanation in simple language of the theory and practice of wireless telegraphy and telephony. Fourth edition. 154 pages, 156 engravings. Price .....\$1.50

#### THE A B C OF VACUUM TUBES USED IN RADIO RECEPTION.

#### By E. H. Lewis, Assoc. I. R. E.,

Radio Instructor East Side Y. M. C. A., New York City. (Fully Illustrated.)

This is the book for the person who wishes to know what goes on the inside of a vacuum tube when it is used in a radio receiving circuit. It is especially valuable to the person who knows nothing about radio and very little if any-thing about electricity. No previous technical knowledge is necessary to understand it. The book is also of great value to the experimenter who is just taking up the fascinating study of vacuum tube operation.

Starting with an explanation of elementary electrical terms, and list of symbols the functioning of various vacuum tubes as detectors and amplifiers is explained step by step in an easily understandable manner. The subject of speech distortion, one of the difficulties frequently encountered in radiophone reception today, is discussed and its elimination pointed out. Various practical circuits are shown and discussed. No technical terms are used without their meaning being first explained.

No owner or prospective owner of a radiophone receiver should be without the knowledge to be gained from this elementary book.

Price ......\$1.00

#### HOW TO MAKE COMMERCIAL TYPE RADIO APPARATUS.

#### By M. B. Sleeper.

(Fully Illustrated.)

For the man who builds and designs his own equipment there is a lot of satisfaction in knowing that his apparatus is comparable to that of commercial design. The book describes in detail many commercial type of transmitting spark and vacuum tube sets, both telephone and telegraph and receiving equipment of all kinds. The experimenter will be able to get a world of ideas for the design and construction of his next piece of radio equipment from the very clear descriptions and the 98 clearly illustrated figures. Price .....\$0.75

#### CONSTRUCTION OF NEW TYPE TRANSATLANTIC RECEIVING SETS.

#### By M. B. Sleeper.

(Fully Illustrated.)

In addition to the listening to ships and broadcasting stations on short wave lengths there is a peculiar fascination about listening to the high-power telegraph stations of England, France, Germany, Russia, Italy, as well as those located in the Pacific Ocean and the Oriental countries. It is much easier to do this than most people imagine. The sending is very slow, a feature of assistance to the beginner in telegraphy. Several types of receiving sets for this task are described. Detectors, amplifiers, oscillators, etc., for long-distance reception are also described. Suggestions for the operation of relays by the signals and the reproduction of them on a phonograph are given. In addition there is some valuable data on home-made wave meters for testing and experimenting. .....\$0.75 Price, each .....

#### EXPERIMENTAL WIRELESS STATIONS.

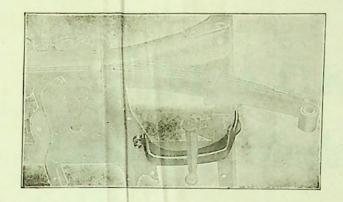
By P. E. Edelman.

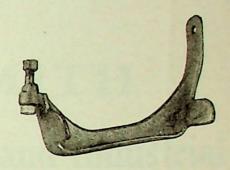
The theory, design, construction and operation is fully treated, including Wireless Telephony, Vacuum Tube, and quenched spark systems. The new enlarged 1920 edition is just issued and is strictly up to date, correct and com-This book tells how to make apparatus to not only hear all telephoned radio messages, but also how to make simple equipment that works for transmission over rea-sonably long distances. Then there is a host of new information included. The first and only book to give you all the recent important radio improvements, some of which have never before been published. 392 pages. 27 chapters. 167 illustrations. Price .....\$3.00

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For Ford Cars.



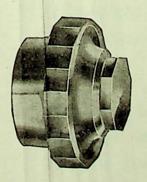


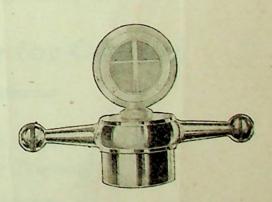
Prevents the straining of the steering mechanism, prevents the buckling of the front wheels, controls the turradius of the car in either direction, thereby eliminating the danger of the car leaving the road.

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LE LUXE HUE CAPS FOR FORD CARS.





Adujstable feature which always places the ball arms of cap parallel to front of radiator. No drilling necessary to attach moto-meter, simply remove screw. Sleeve covers the unattractive bottle shape filler neck of radiator.

Heavy cast material, highly polished, nickel-plated, fits all original Ford Radiators and also can be supplied without the sleeve for use on replacement radiators which have a straight filler neck.

Each cap in box with adjustment instructions.

No. 92. Size 67's" over all. Price, each...........................\$1.25

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